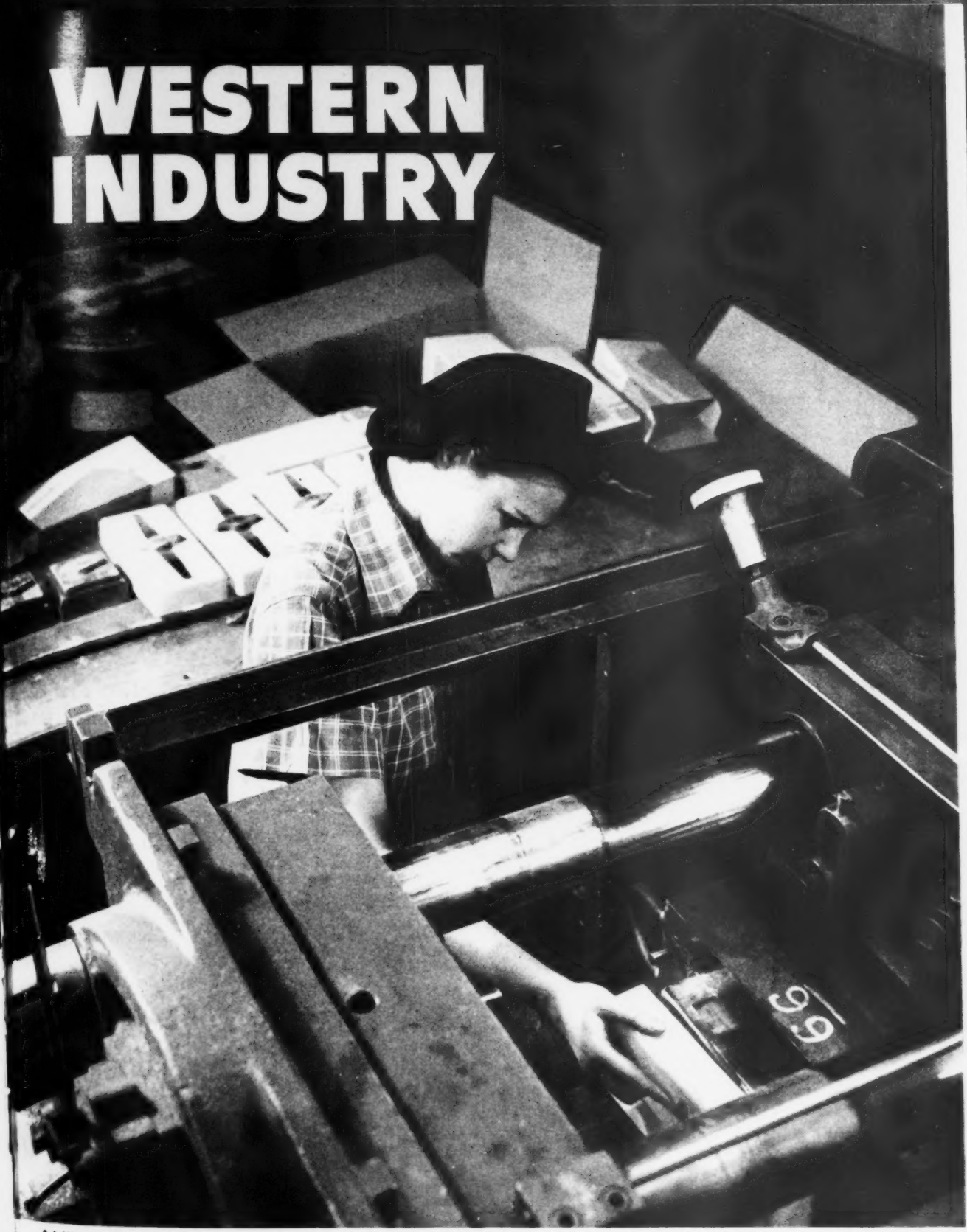
WESTERN INDUSTRY

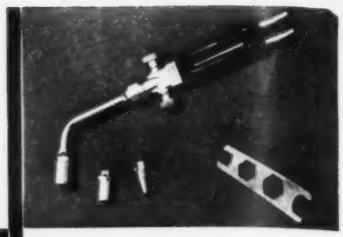


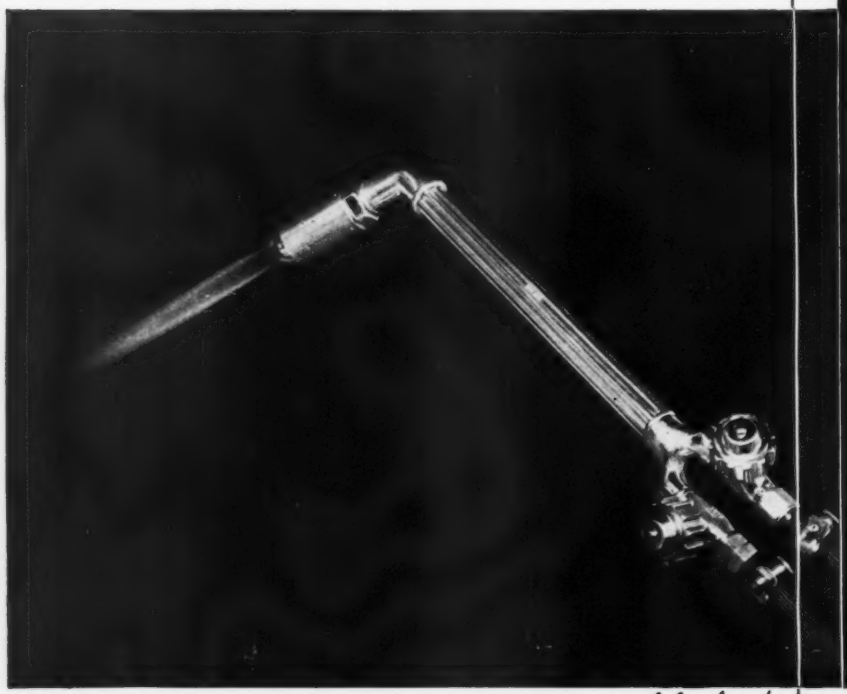
• A Western plastics industry scene: removing plastic tissue dispenser from injection molding machine. For details see page 5.

IN THIS ISSUE: *What Employees Want Told Them About the Company; Foreman Is Key in Incentives; Supplementary Power Sources; Pre-Packed Tomatoes Handled Mechanically; Save This Loss: Only 20% Arc Time on d.c. Welders; Boat Patch Gluing Time Cut 40%; Metal Trades Retirement Plan*

Thirty-Five Cents VOLUME XIII NUMBER 5 **May, 1948**

jeweler , dental laboratory technicians, hobbyists, and anyone interested in light brazing or soldering operations welcomes this new Model 3401, "four-in-one" torch, illustrated to the right. you can use this torch with any practical fuel gas such as acetylene, natural gas, city gas or liquefied petroleum gas in combination with compressed air or oxygen; and it produces an ideal flame for such operations.





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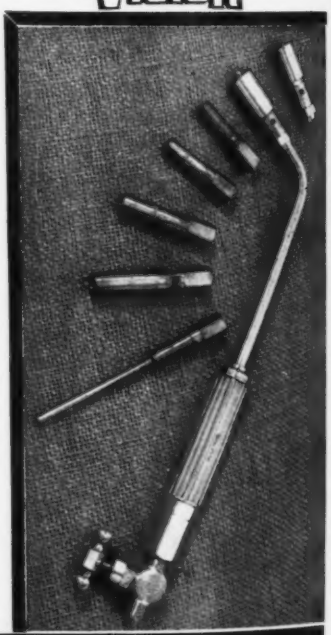
put this air-gas heating torch into your hand . . . feel it do its job swiftly and efficiently. watch it in windy, drafty places . . . it holds its flame. the new tip construction gives ideal flame protection with maximum heat. you may secure this outstanding heating torch in several useful sizes — for preheating, brazing, soldering or bending and straightening operations. it utilizes compressed air with either natural gas or one of the liquid petroleum gases, such as butane or propane.



the bunsen burner type torch (right). this victor bunsen burner type of torch, model N600, may be provided with tips using natural gas or one of the liquefied petroleum gases or acetylene — the needed air is siphoned into the torch — tips are made in several useful sizes including the radiator repair tips. this little torch is excellent for a range of lighter soldering and brazing operations.

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for its co-operative course in Screw Machine Technology

The Rochester Institute of Technology, founded in 1829, has pioneered in co-operative education for more than a quarter of a century. Through alternate periods of school and field work, the Institute provides a program of education in which students may correlate technical instructions with practical, on-the-job experience in industry.

With active co-operation from the National Screw Machine Products Association, the Institute now offers a major subject in "Screw Machine Technology." The program meets a real need for technically trained men in this field. Students are taught to design screw machine tools and cams; to set up and operate turret lathes and a variety of single and multiple-spindle automatics; to do layout work—and to compute costs by approved methods.

Again, hats off to R.I.T. for its efforts toward better screw machine products at lower cost—a goal made possible through the use of modern machines, the know-how of efficient tooling, and the use of rod stock of maximum machinability.

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Top: Mechanical Department Laboratories. The Screw Machine Laboratory is adjacent to and part of the General Laboratory layout.

Above, and at right: Typical views of students doing screw machine set-up, operation and layout work.

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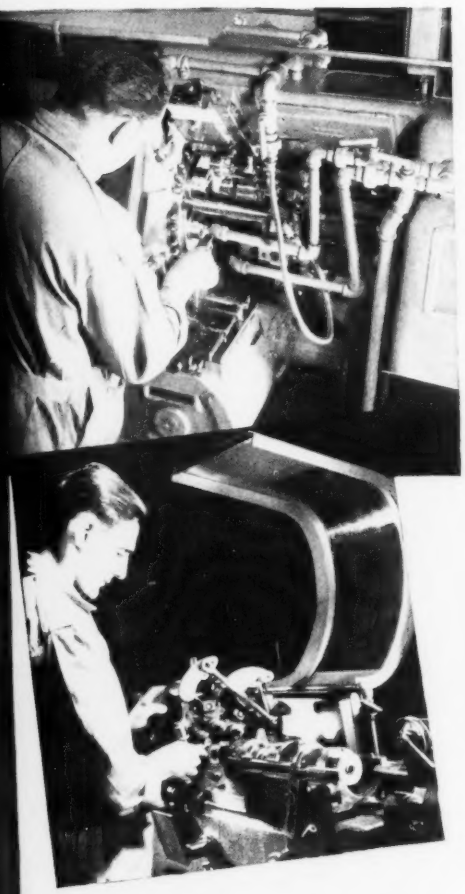
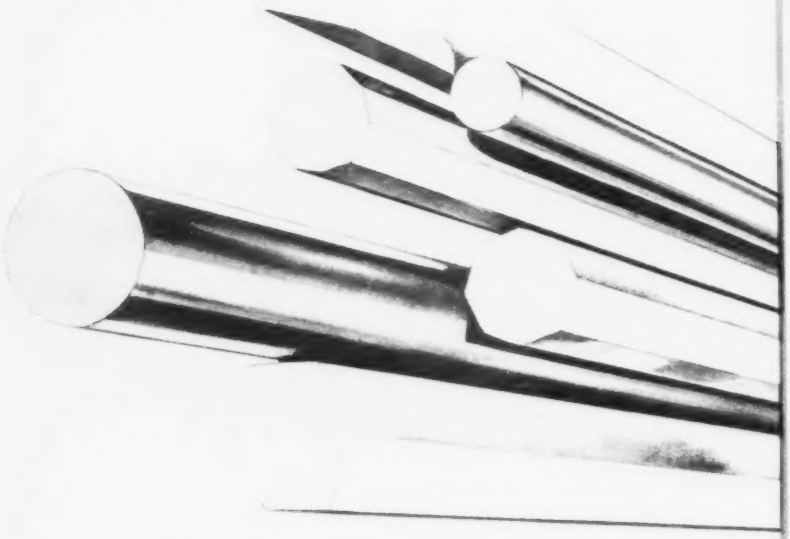


Top: Mechanical Department Laboratories. The Screw Machine Laboratory is adjacent to and part of the General Laboratory layout.

Above, and at right: Typical views of students doing screw machine set-up, operation and layout work.

46 COPPER AND COPPER ALLOY RODS from which to choose



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Listed here are 46 of a large number of Anaconda Copper and Copper Alloys manufactured in rod form. They are made in all commercial sizes and shapes. Special Shapes in rod form are also produced by The American Brass Company in copper, brass, bronze and certain nickel silver and phosphor bronze alloys.

Publication B-14 goes into detail on Anaconda Copper Alloy Rods. Publication B-3 offers practical suggestions for machining. Either one or both of these booklets will be mailed on request.

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Leaded Brass–211
Butt Brass–229
Free Cutting Yellow Brass–271
Forging Brass–250
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Leaded Naval Brass–612

PHOSPHOR BRONZES
Special Free Cutting Phosphor Bronze–610
Leaded Phosphor Bronze 5%–979 (Grade B)

NICKEL SILVERS
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Leaded Nickel Silver 12%–796
Leaded Nickel Silver 18%–789

COPPER-SILICON ALLOYS
*Everdur–1012 (Leaded)
Everdur–1014

27 Other Machinable Rod Alloys for General and Engineering Uses

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Deoxidized Copper–939

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Phosphor Bronze–314
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*Ambrac–850

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Super Nickel–702

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*Avialite–915

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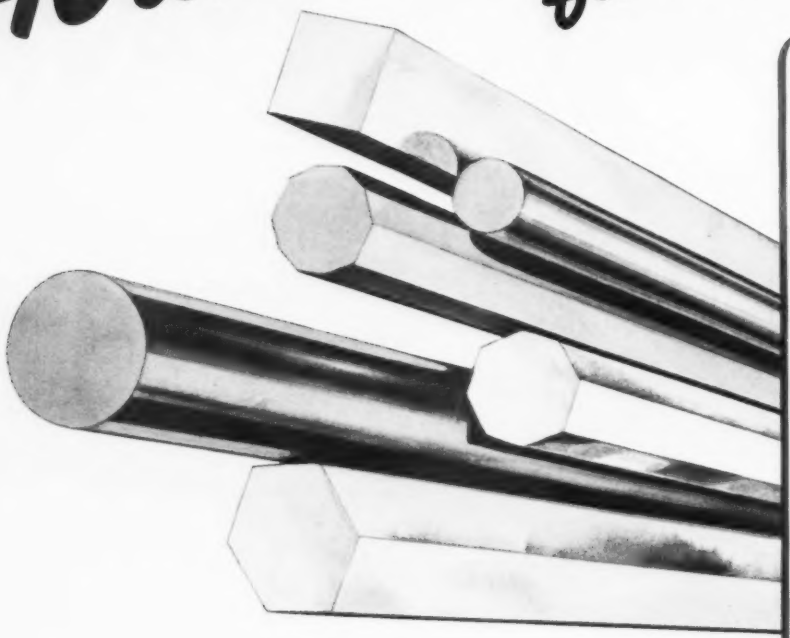
46 COPPER AND COPPER ALLOY RODS *from which to choose*



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This Month in

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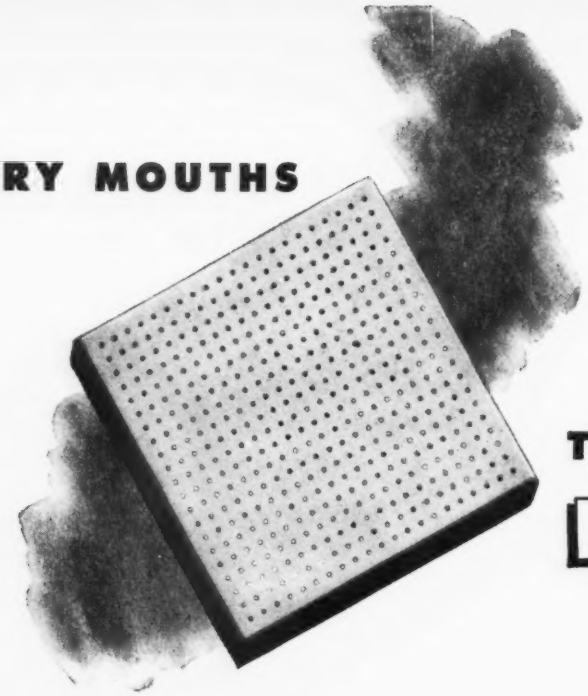
Front Cover

Out of a total national production of 1,200,000,000 lbs., six large plastic materials companies, 47 molders, 11 laminators, and 47 fabricators produced 23,000,000 lbs. of end-use plastics on the West Coast in 1947. Scene is from Los Angeles Plas-Tex Corp. plant, one of largest plastic manufacturers in nation.

441 HUNGRY MOUTHS



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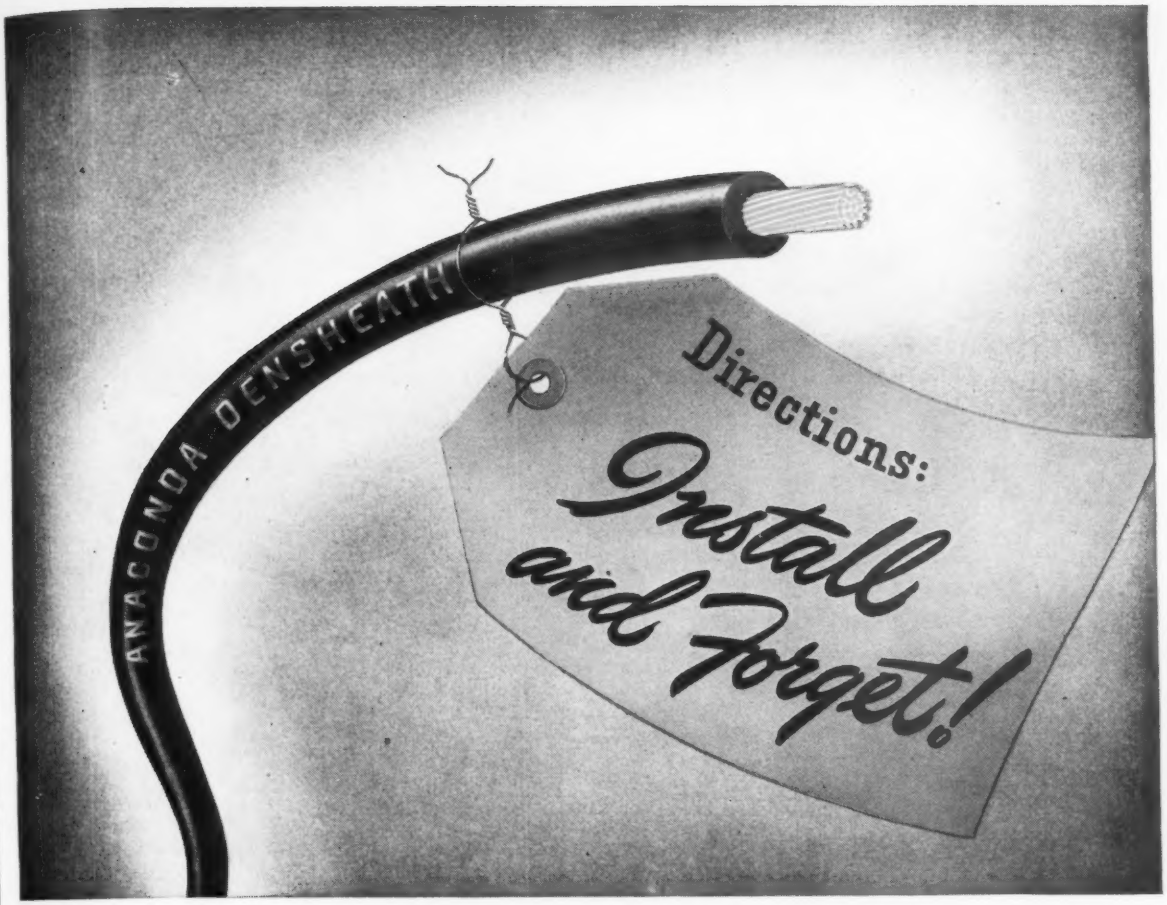

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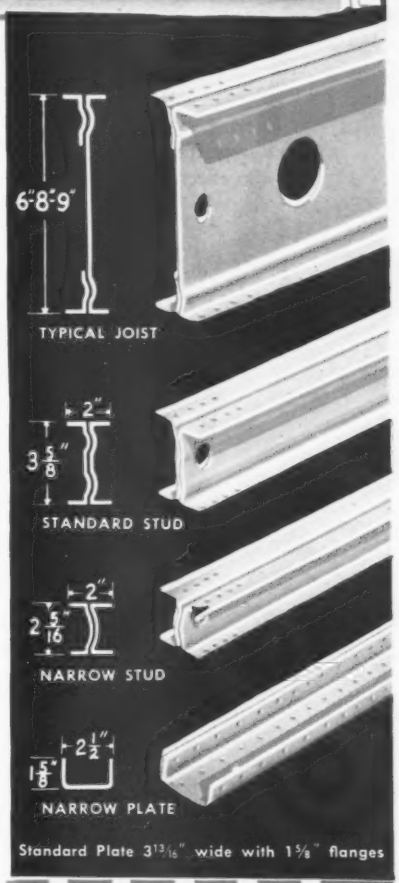

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_____	"	"	26'
_____	"	"	28'
_____	"	"	30'
_____	16 14	2 x 8 JOISTS	14'
_____	"	"	16'
_____	"	"	18'
_____	"	"	20'
_____	"	"	22'
_____	"	"	24'
_____	"	"	26'
_____	"	"	28'
_____	"	"	30'
_____	"	2 x 9 JOISTS	14'
_____	"	"	16'
_____	"	"	18'
_____	"	"	20'
_____	"	"	22'
_____	"	"	24'
_____	"	"	26'
_____	"	"	28'
_____	"	"	30'
_____	18	2¼" STUDS	20'-0"
_____	18	2¼" STUDS	8'-0"
_____	"	"	8'-4"
_____	"	"	10'-0"
_____	"	"	12'-8"
_____	"	"	20'-2"
_____	"	"	25'-0½"
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_____	"	3⅝" STUDS	8'-0"
_____	"	"	8'-4"
_____	"	"	10'-0"
_____	"	"	12'-6"
_____	"	"	20'-0"
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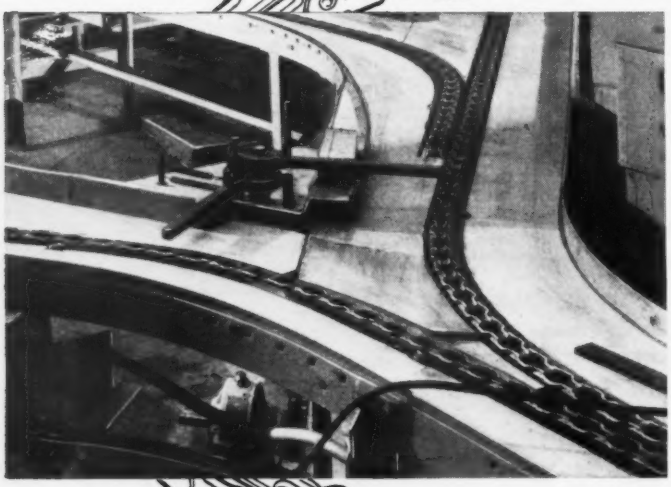

• *Rex Double-Flex Chains can be turned to converge at one delivery point to considerably simplify handling problems and step up efficiency.*

• *The ability of Rex Double-Flex to weave around obstructions simplifies conveyor set-ups . . . makes most effective use of floor space.*

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to *speed* wire and cable *delivery* in the west

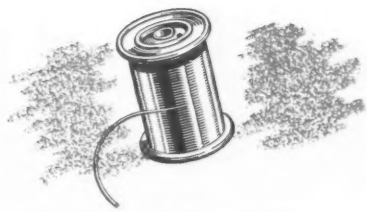
The Oakland Cable Plant of General Electric has been expanded. Formex magnet wire is now being manufactured; capacity for Flamenol cable has been increased. New machines are now operating. Inventories are being built so that many standard sizes of wire and cable can be bought from stock.

To western industry, this means faster delivery. It means even more personalized service. It means assurance of the same high quality for which all G-E wire and cable products are justly famous.

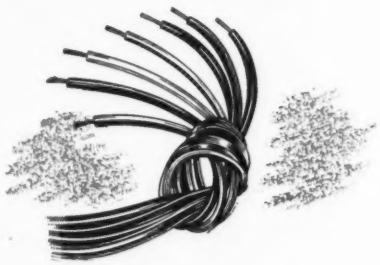
* * *

The new addition to the Oakland Cable Plant is only one part of General Electric's west-coast expansion program—a program which means that the total west-coast employment of General Electric will soon approach 12,000 persons—in eight different plants.

If you need good cable and fast western service, just get in touch with your nearest G-E office. Apparatus Dept., General Electric Company, Schenectady, N. Y.



FORMEX Magnet Wire—The Oakland Cable Plant is now manufacturing Formex Magnet Wire. Its extremely flexible, abrasion-resisting insulation makes it easy to wind and easy to handle. Formex saves space, simplifies varnish treatment, has more feet per pound than ordinary magnet wires.



FLAMENOL — Manufacturing capacity of Flamenol cable at Oakland has been increased approximately 50 per cent. This long-lived insulation simplifies wiring jobs, saves space. It offers superior physical properties and high dielectric strength to countless low-voltage applications.

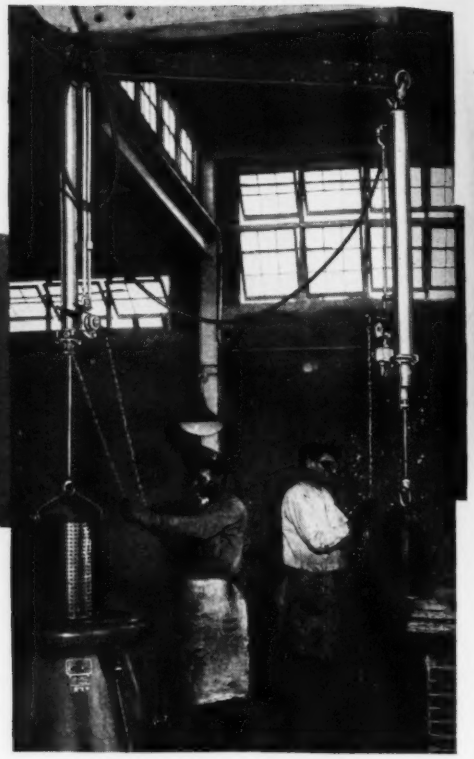
GENERAL ELECTRIC

503-29

With factories in Anaheim, Los Angeles, Oakland, Ontario, San Francisco, San Jose, Seattle, and Richland, and Sales Offices in twenty Western cities.

Get More Production Per Man with . . .

CURTIS AIR HOISTS



The speed, ease of handling and accurate control of Curtis air-powered Hoists and Cylinders step up production.

Wherever a lifting, pulling or pushing operation is involved, CURTIS Air Hoists save time and labor; cut load-handling costs.

Curtis Air Hoists provide:

- Low original cost
- One-man operation
- Immunity to abuse by overloading
- Capacities to 10 tons
- Light weight
- Lowest operating expense
- Finger-tip control
- Pendant, bracketed or rope-compounded types

Send for Bulletin C-7 on Curtis Air Hoists, Air Cylinders and Air Compressors.

Sales Representatives:

C. HOMER REDD { 421-423 E. Washington Blvd., Los Angeles 15, Calif.
{ 2850 Broadway, Oakland 11, Calif.

O. J. THOMAS, 1018 S. E. 8th Ave., Portland 14, Oregon

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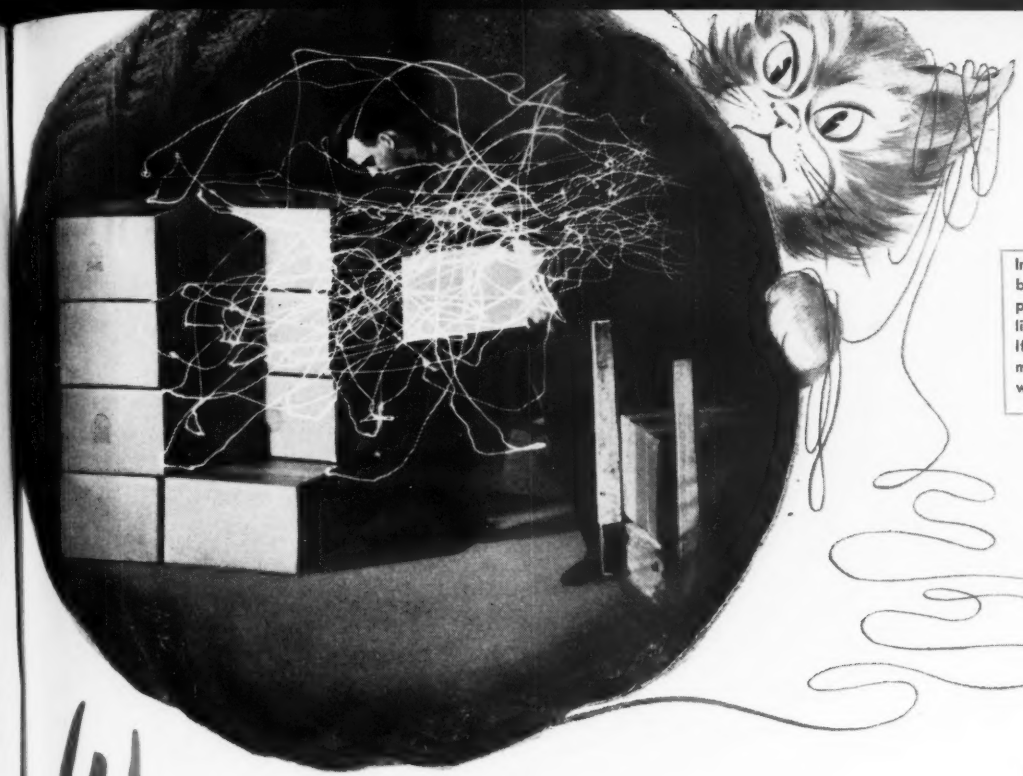
Name.....
Firm.....
Address.....
City..... Zone..... State.....



In this camera study, a light bulb on the worker's wrist produces this tangled mass of lines, showing his movements. If your truckers make such moves repeatedly—you are wasting time and money.

Wow! what a tangle!

...t so easily unsnarled...with a BARRETT

oid these costly tangles! Straighten t your handling problems with rrett Lift-trucks and Skids.

They put an end to repeated loading d unloading—piling and unpiling. e loads stay on the skids . . . always dy to roll with the sweep of the ft-truck handle.

There are no waste moves as Barrett Lift-trucks and Skids take your materials from room to room, floor to floor, in and out of storage . . . so quickly and easily that one man with a Barrett actually handles more than 3 or 4!

Ask to see the Barrett system. A Barrett engineer will be glad to demonstrate.

Send for your free *copy of the Barrett Junior Catalog.*

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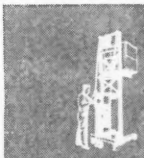
ONE MAN DOES MORE THAN 3 OR 4 . . . WITH A BARRETT

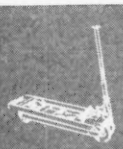


PORTABLE ELEVATORS

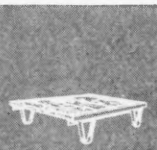
STEEL STORAGE RACKS

ELECTRIC LIFT-TRUCKS

Barrett Handling Equipment



HAND LIFT-TRUCKS



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THE CMP WAREHOUSE

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for specialty strip steel service

FOR EXAMPLE:

Quick delivery on Thinsteel, CMP's precision cold rolled strip steel is the general rule. Availabilities vary but you may find just your need. Typical stocks on hand: Low carbon cold rolled or electro-zinc coated, all tempers .025" down to .001"; annealed spring steel .072" down to .010", in AISI 1095 or 1075; type 302 or type 430 stainless in gauges thin as .001".

Better phone today.

AND MORE TOO!

To help you convert idle stocks of your metal into needed widths or lengths CMP's facilities are at your service—and fast, too. Coil slitting up to 36" wide and straightening and cutting to length equipment up to 12" wide.

Phone or write today.

THE COLD METAL PRODUCTS CO.
WESTERN WAREHOUSE DIVISION

6600 McKINLEY AVENUE . . . . LOS ANGELES

Phone PLeasant 3-1291 or 3-1292

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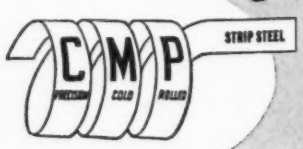


Why Chemicals Have Been Added to Motor Oil

Shell scientists believe you should really know about the new motor oils... to guard your engines... to save you dollars

As engine power output has been stepped up... and speed increased... the size of engines has become smaller. And moving parts have been made to fit tighter and tighter.

So motor oils today must stand up under far greater heat than before. They have to get into tinier places to lubricate. They have to keep dirt from forming. They even have to "wash" the engine.

That's why chemicals have come into the motor oil picture. It has been found that certain chemicals can be added to motor oil to do these extra jobs.

Some chemicals are "inhibitors"

Some keep the oil from *foaming*. Others keep acids from forming... acids that might corrode and rust the insides of an engine. Still other and newer inhibitors (first developed by Shell Research) keep motor oil from "oxidizing"... from breaking down under heat and moisture into dirt and sludge.

Other chemicals are "detergents"

They dissolve dirt, acids and carbon which form on the pistons and cylinder walls of the engine. Detergents hold these deposits in the oil ... carry them away when the oil is drained.

Golden Shell Motor Oil, of course, has both

Shell scientists have tested and checked every known inhibitor and detergent. They have chosen a number of the best of these additives for Golden Shell Motor Oil — each to do a special job. Shell Research has combined these "bests" in the unique New-Formula Golden Shell Motor Oil.

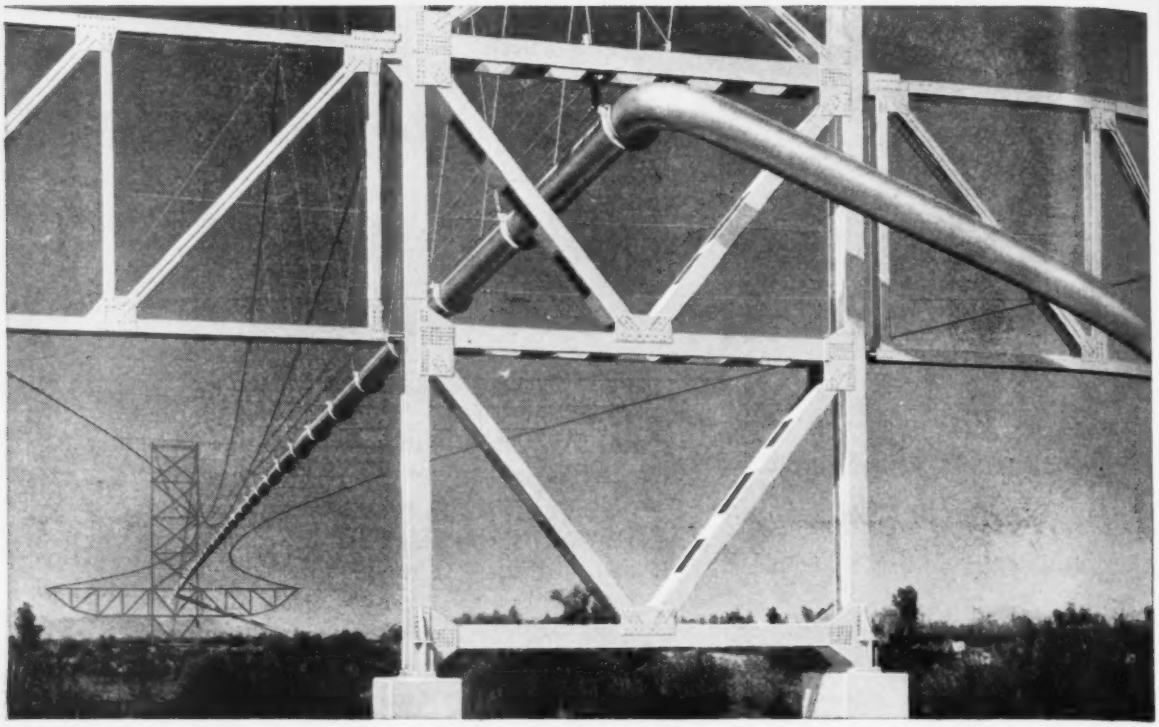
GOLDEN SHELL MOTOR OIL

a development of Shell Research

ARE YOU ABSOLUTELY SURE YOU ARE GETTING ALL THAT'S NEW IN LUBRICATION?

Your Shell Lubrication Engineer can make a complete study and analysis of your plant and machines... give you engineering counsel, advice on new lubricants and their application... help you set up schedules and controls for each and every machine. For that kind of service — call in your Shell Lubrication Engineer.

SHELL



Ropes of steel *support and stay the thin-walled 30" pipe, fabricated from U·S·S steel plate, that spans the Colorado River carrying natural gas to Los Angeles . . . supplying fuel to homes and factories in this expanding area. In the photo below, workmen put final touches to the system that carries the gas from the 30" pipe through the metering station.*

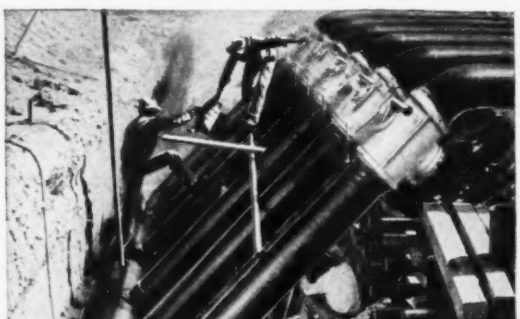
Steel is building the West

for Today – for the Future

It's a hurry-up job, this Western building. For the expanding West can't wait. It's a job for steel . . . with fabricating speed to get the work done fast . . . with strength that means permanence.

Throughout the West in large jobs and small, steel by Columbia is helping push progress. For Columbia's great Western mills are turning out record quantities of steel. And as a member of United States Steel, Columbia serves the West by combining its own resources with those of *The Industrial Family that Serves the Nation.*

For information on any U·S·S steel product, contact your nearest Columbia Steel Company office.



Only STEEL can give you all 7 of these structural advantages

Extra toughness and shock resistance • Incombustibility
High strength-weight ratio • Highest modulus of elasticity
Versatility of application • Great durability • Ultimate economy

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USS STEEL UNITED STATES STEEL

UNITED STATES STEEL

Announcing the New

8½ GALLON STAINLESS STEEL DRUMS

for General Chemical NITRIC ACID

Some of the Advantages

STRONGER . . . SAFER:

Entire drum made of reinforced stainless steel. With it you reduce plant safety hazards since there is no glass to break, no wood to splinter.

ECONOMICAL . . . FREIGHT SAVINGS:

No excess weight. Buyer makes worthwhile savings on freight expenses, both on incoming shipments of full drums and on the return of empty drums for credit. By purchasing nitric acid in this drum instead of in ordinary carboys you save freight on almost 600 pounds tare weight for each ton of acid.

COMPACT . . . SPACE SAVER:

Only 12" in diameter and 22" high, the drum requires 60% less space per gallon of acid stored than ordinary carboys do. With it you can conserve floor space and store more acid in less room . . . an important advantage where space is limited.

LIGHTER . . . EASIER TO HANDLE:

User handles less dead weight per pound of acid. Drum itself weighs only 19 pounds, yet holds 95 pounds of acid. Compare this with ordinary 72-pound glass carboys which contain 150 pounds of acid.

ONE-MAN PACKAGE:

The convenient size and lower gross weights of this drum make it a time-and-labor saving unit. Special handles at top and bottom increase ease of lifting and pouring by one man.

EASY TO OPEN:

Pour-out is sealed with hexagonal stainless steel screw plug. Opens easily and seals tightly with ordinary wrench.

Now General Chemical brings Industry another important packaging development—stainless steel drums for General's Nitric Acid. This entirely new type of drum offers consumers greater utility, safety, and economy than any previous nitric acid container.

Some of its advantages are outlined here. Important are the savings on freight and labor, and the increased efficiency and safety in plant operations made possible by this drum.

Consider what these benefits can mean to you. Then request shipments in the new 8½ gallon stainless steel drums on your next order of nitric acid from General Chemical.

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FORGED — Ideal Electric Steel Parts for Jet Aircraft — ROUGH TURNED

Manufactured for Menasco Manufacturing Co., Burbank, Calif.

Use IDEAL ELECTRIC QUALITY STEELS FOR ALL PURPOSES..

INCLUDING SUCH SPECIAL APPLICATIONS AS

AIRCRAFT • ORDNANCE • BEARING • DIE BLOCKS

At National's Torrance Plant you can get IDEAL Electric Carbon and Alloy Steels in a variety of types—including steels for dies, bearings, billets, large bars, and open die forgings up to 35,000 pounds. Extensive machining facilities are available for your work. And a modern laboratory is available to western industries for commercial testing.

THE NATIONAL SUPPLY COMPANY

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Ideal Pressed Steel Forgings, Billets and Large Bars Are Distributed by

C. B. S. STEEL AND FORGE

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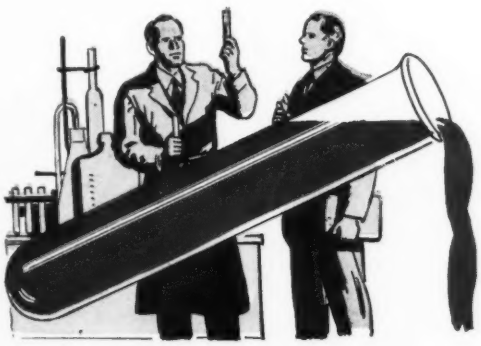
T5X

THE NEW PURPLE OIL

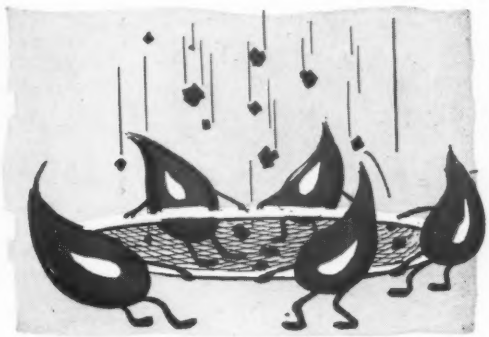
Gives Greater Protection for ANY Internal Combustion Engine!

2. T5X proved its outstanding quality by easily passing the grueling 500-hour continuous-run Diesel engine tests.* In the "L-4" Coordinating Research Council gasoline engine tests, T5X proved to be so stable that it lasted *double* the length of time required for *top* lubricating performance!



4. T5X reduces wear to an absolute minimum! It contains a special inhibitor which greatly retards oil oxidation and gives T5X high stability against heat. Another additive protects against corrosion and rust. A third ingredient retards foaming even under the most severe operating conditions.

1. T5X—the sensational new purple oil—gives outstanding protection and performance in *any* kind of internal combustion engine in *any* industrial operation! T5X is a fully compounded, detergent type oil. Its distinctive color comes from an exclusive ingredient that helps give the oil its remarkable stability.



3. T5X keeps your engines clean longer! It contains an exclusive new detergent compound that prevents sludge formation to a degree never before attained—by holding impurities harmlessly suspended in the oil! Thus oil lines, pistons and ring grooves stay clean far longer!

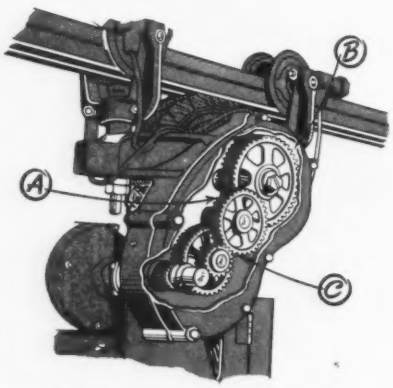
For full information on this sensational new purple oil phone your local Union Oil Representative or wire Sales Department, Union Oil Company, Los Angeles 14, California.

UNION OIL COMPANY

76 OF CALIFORNIA

** Tests conducted in a high-speed, automotive-type Diesel engine operating at 2000 r. p. m. and maximum load . . . considered the most exacting test of all for Diesel lubricants.*

CASE 1062 -- MAINTAINING LUBE FILM ON HEAVY-DUTY GEARS.



HOIST GEAR UNIT FOR OVERHEAD CRANE

Viscous and tacky Calol Vistac Oils stuck tight under extreme pressures on hoist gears. Efficient for all heavy-duty gears, like industrial reduction sets. Come in six grades, 9X (SAE 10) to 45X (SAE 40). Apply by forced-feed or gravity lubricators, bottle- or wick-oilers.

A. Contain oiliness and extreme-pressure compounds. Tough film won't rupture, even on slow-moving gears with extreme pressures on wide area for long time.

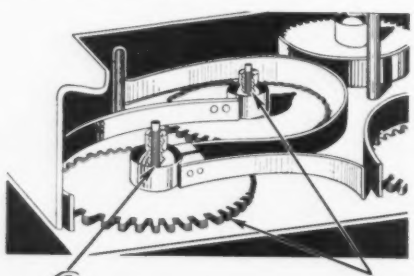
B. Economical - little required to provide adequate lubrication and dissipate heat. Resist highest operating temperatures.

C. High affinity for metal maintains lubricating film, reduces power loss and wear.

Calol Vistac Oils also recommended for lubrication of air hammers, rock drills and other air-powered tools ... atomize quickly and stay fluid at low temperatures.

CASE 1068--ELIMINATING DANGER OF FOOD CONTAMINATION BY MACHINE GREASE.

SECTION OF ANDERSON DISK EXHAUSTER



No taste, odor or color was imparted to food being handled by machines when Calol White Grease was used to lubricate them. The grease often was close to the food and sometimes contacted it. Comes in three grades to meet various conditions: Nos. 1, 2 and 3.

Chemically pure - made with white oil that passes all requirements of U. S. Pharmacopoeia ... is not absorbed into the human system.

A. Provides a tough lubricating film on machine bearing surfaces and reduces wear.

B. May be applied by grease gun, cup or sight-feed oil cups depending on viscosity grade.

Lightest grade is fluid for use on such machines as pumps and closing machines in canneries.

Calol White Grease gives outstanding service in these and other food-handling machines: Exhausters, pumps, graders, preheaters. blanchers, finishers, pulpers.

Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert service—make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20, California.

RPM CALOL

FOR EVERY NEED A **STANDARD OF CALIFORNIA** JOB-PROVED PRODUCT

In Our Mail Box

For Thinkers

Editor, Western Industry:

Thank you for the April issue editorial based on my talk before the Commonwealth Club.

Editorials are for thinkers, and no one appreciates more than I do that progress has to come from the approval of thinkers.

LOWELL MASON
Federal Trade Commission
Washington, D. C.

The New Frederick Taylor

Editor, Western Industry:

As to whether the West will be the development place for the new Taylor, as suggested in your February editorial, it is most difficult to prophesy such a development, although it would seem natural with the growth and extension of industry in the Far West that this area will be the first one to take into more serious consideration the human factors involved in the subject of mass production.

I do believe that Mr. Drucker is correct in his analysis that with radical and effective changes made during the wartime, they will be continued during this period of maximum production in a semi-peaceful era. The job as Mr. Drucker has outlined must be done and it is certainly my hope that the development of the proper personality to do it will be produced on the West Coast.

C. W. PLANJE, Vice President
Gladding, McBean & Co.
San Francisco 3, California.

Editor, Western Industry:

Your editorial "A New Taylor Out of the West?" is interesting reading. . . . Here are two thoughts which you might wish to explore.

The first is that Western industries generally do not involve the mass production line problems in which the opportunities which are emphasized by Dr. Drucker exist. The second is that the major institutions which could devote themselves to well planned research are not located in the West. This statement is made with full recognition of the values of the Stanford Graduate School and the California Institute of Technology. The problem is one which fits better into the schools at Harvard, Yale, Chicago and Purdue.

ALEXANDER R. HERON, Vice-President
Crown-Zellerbach Corporation
San Francisco, Calif.

Editor, Western Industry:

The editorial in your February issue is quite interesting and the question posed a challenge to Western industry.

The problem has been with us for a good many years and may well be a major contribution to certain of the frustrations that appear from time to time as "labor troubles."

No simple solution to the problem of having each employee realize and appreciate his part in producing an automobile, or an airplane, is on the horizon.

The story of the mason who had the vision to realize he was building a cathedral is rarely repeated in a "mass" production operation.

Most of us assume that Taylor had a virgin field for his work and that no such advances in managerial effectiveness are again possible, but it is to be hoped that somewhere further gains are registered before the free enterprise system is maligned into an adjunct of a socialistic philosophy.

L. V. BEDELL, Manager
Litton Industries
San Carlos, California.

(Continued on page 23)

EDITORIAL COMMENT

Cooperation vs. Conflict

APPARENTLY we all ascend the ladder of Western cooperation in rather uncertain fashion.

For example, the Grand Junction Daily Sentinel has a glowing editorial, "Hands Across the Divide—Both Ways," welcoming the Colorado Resources Development Council as a factor in uniting eastern and western Colorado.

Right after it follows another editorial hotly denouncing California for having lured away a top engineer from the upper Colorado basin states group, supposedly because of the inner secrets that he could take along with him and use against his former employers in the future. It does not seem to have occurred to the Daily Sentinel that perhaps the engineer moved to the new job because it paid more money, nor that he might be a leavening influence in favor of the upper basin states in his new surroundings.

The great need for the West remains to realize that this problem of water is an all-Western matter, and must be approached from the viewpoint of cooperation, not of division. All the Western states will find the going much easier if they will start with the premise that they have more to gain by cooperating than by desperately holding on to every gallon of water, and that cooperation will distribute existing supply more satisfactorily and increase the possibility of additional supplies being developed.

This is not intended as a Pollyanna suggestion in any sense for individual states to go to sleep over their rights and opportunities in the fond hope that somehow everything will turn out all right. It is not so easy as all that, nor is human nature that trustworthy, but we do feel that intelligent exploration of the whole situation will develop a logical pattern that it will be sensible for all to accept.

One Job at a Time

WHILE Douglas MacArthur might make the best president the United States ever had — no one ever knows beforehand just what kind of a president we will get — he should resign from his position as head of our occupation forces in Japan before becoming a candidate either in state primaries or at the national convention. *Western Industry* is not affiliated with any political party, but this is a case where national welfare may be jeopardized through personal ambition.

Apparently MacArthur's autocratic status has contributed greatly to his authority in Japan and his influence on neighboring countries, but the battering that any political candidate has to take individually will lower his prestige in the Far East. Unfortunately it is not merely his personal fortunes that are concerned, but American prestige, represented in the person of our supreme commander in the Far East.

This is no time to shut our eyes and say that the Japanese were too badly beaten ever to be troublesome again, and that everything has been solved in Japan. The calm surface of conditions in that country is entirely too deceitful, and in the event of future trouble, the West will be the portion of the country most directly affected.

We Might Measure Ourselves

CERTAINLY the Russians are stubborn, yes, ornery, but as long as the English-speaking peoples doggedly hang on to such illogical and unrelated means of measurement as feet, acres, gallons and pounds, instead of sensibly adopting the metric system, can we say that we are totally without sin? GIs in two wars readily and cheerfully adopted the kilometer as a measure of distance. Why cannot civilians take up where they left off?

New 2½" to 4" GEARED PIPE THREADER

that's a cinch to work with

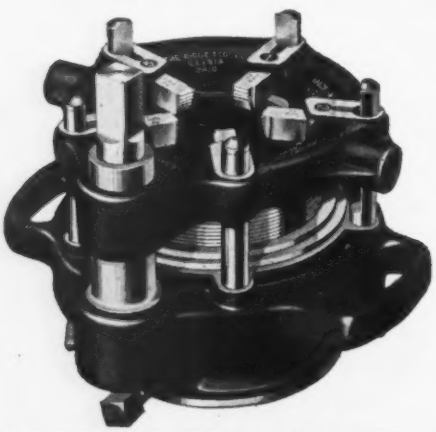
RIDGID No. 4P

Loop handles make it easy to pick up

easy to carry

easy to put on pipe

● You can't make a big die stock like this out of marshmallow just to keep it light weight. This new RIDGID 4P is husky all steel-and-malleable but those sensible balanced loop handles enable you to use it without breaking your back; even when it's greasy and you're tired, you swing it into action easily, smartly — straight on the pipe, no struggle, no slipping or tipping.



Quick-Setting Workholder

Mistake-proof plate type, sets to size *before* you put it on pipe. One screw to tighten, no bushings to bother with.

Less-Effort Pipe Threading

Smooth accurate threads easily cut with 4 sets of 5 dies, standard or tapered, drip threads, short nipples. Ratchet handle equipped, RIDGID power universal drive shaft available.

Almost No Upkeep

Twin-anchored pinion turns in oilless bronze bearing — never needs oil. Grease packed gear fully enclosed, safe for you, safe from dirt and wear.

To save yourself work and muscle-fag and get perfect 2½" to 4" threads, order the efficient new 4P — at your Supply House.

RIDGID WORK-SAVER PIPE TOOLS

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

MAIL BOX—*(Continued from page 21)*

Aircraft Outlook

Editor, Western Industry:

The two editorials on page 19 of your March issue arrest my attention. The first one ("Aircraft Outlook") is so sensible. The second one ("Let Justice Be the Rule"), coming just after my reading *Time's* presentation on communism in the last number to reach me (the one showing the face in the keyhole) is appreciated especially.

CHARLES A. CHASE, Gen. Mgr.
Shenandoah-Dives Mining Co.
Silverton, Colorado.

Keeps in Touch

Editor, Western Industry:

I am interested in again getting in touch with what is going on out in California, and on the Coast, so would like to have some monthly issues of your magazine. I do not know your exact subscription rates, so am enclosing my check for $2.00, and would request you send me as many monthly issues as the money will pay for.

I am a former resident of Los Angeles, have been here two years, and expect to return to California within the next year, so want to sort of keep in touch with what is going on in the industrial lines.

Thanking you very kindly and awaiting your prompt reply, I am,

WILLIAM A. SCHILLER
Industrial Engineer
A-1 Bit and Tool Company
Houston 1, Texas.

Mutual Interests

Editor, Western Industry:

Attached with this is a recent editorial from the pages of the Grand Junction Daily Sentinel, western Colorado's leading daily publication, touching upon the objectives of the Colorado Resources Development Council in the development of Colorado's vast natural resources, and their relation to industry.

Eastern and western Colorado may find in this organization, the Sentinel believes, a common medium for the development of mutual interests, and a sounding board, so to speak, for the welfare of the state as a unit.

This may be of some value in the editorial or news columns of your fine publication which is a source of constant reference in this office.

T. M. METZGER
Director of Publications
Council for Resources Development
Denver 2, Colorado.

Ford Parts Program

Editor, Western Industry:

Your article in the March issue entitled "How the Ford Parts Program is Affecting the West" is an unusually accurate write-up on the subject.

We like the article because, in addition to being a complete picture of the various issues and operations involved, it appears to be unbiased and fair, and should be of value to anyone remotely interested in the industrial progress and welfare of business in California.

LOUIS C. DISSER
West Coast Purchasing Representative
Ford Motor Company
Los Angeles 22, Calif.

Top Evaluation Plan

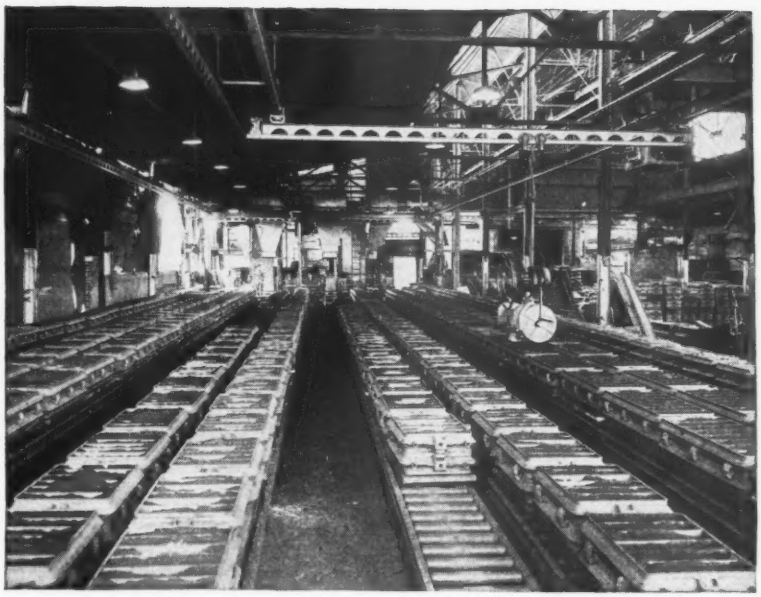
Editor, Western Industry:

Apparently, we have stirred up a proposition of more than passing interest to a number of employers. This is especially indicated by the number of requests for copies of the Evaluation Plan that have come in from the Western states, including companies loctaed in Idaho, Washington and Oregon.

I believe in all instances that the California Manufacturers Association has been sending copies of the Plan to interested inquirers.

T. T. ARDEN
Grayson Controls Division
Robertshaw-Fulton Controls Company
Lynwood, Calif.

(Continued on page 25)



Staying Power

that means economy

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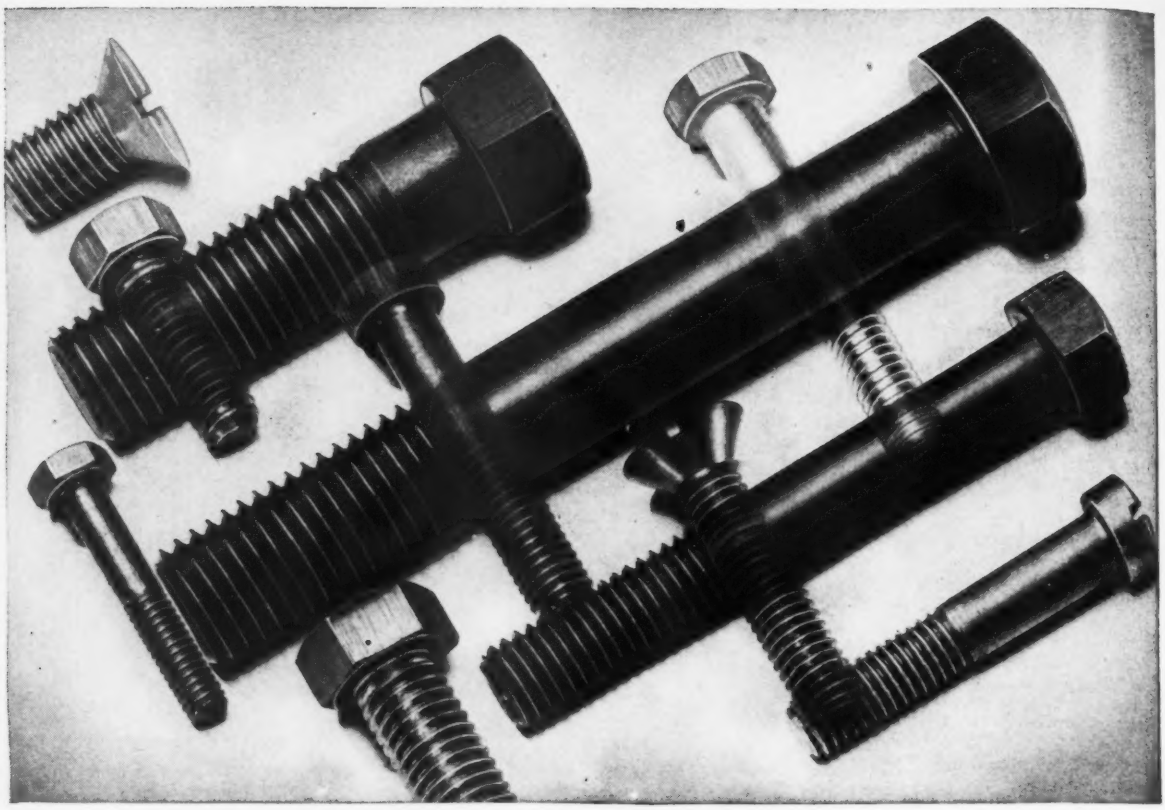

IT'S "t.f.e."

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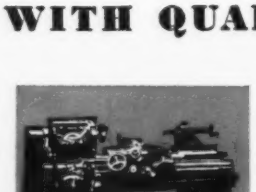

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MAIL BOX—*(Continued from page 23)*

Economizing on Electricity

Editor, Western Industry:

Regarding your article in the April issue on methods of economizing in the use of electricity, our staff does a great deal of this sort of work directly with our customers, particularly in the field of agricultural pumping, and I am sure your article will be helpful.

The "commies," socialists, some labor leaders, and the public-ownership press and other enthusiasts have been having a field-day of vicious, irresponsible and misleading statements at our expense. The center of the whole activity is, of course, the Bureau of Reclamation, and motivating it is its intense desire to get into the retail power business in northern and central California.

We have been through these things before and, while we lose ground to the mud-slingers at first, steady and dignified presentation of the facts to the public always regain it. I am sure the current row will be no exception.

JAMES B. BLACK, President
Pacific Gas & Electric Company
San Francisco, Calif.

Aircraft Outlook

Editor, Western Industry:

On the whole it is believed that your criticisms of the aircraft industry in your editorial "The Aircraft Outlook" are constructive and have some justification. However, exception is taken to your statement that the automobile and truck never had a public subsidy; and, by implication, that the railroads likewise had no subsidy.

It will not be too hard to remember that to promote the railroad system in this country, the Government donated large acreages of very desirable public lands. The automobile industry plugged along in its infancy limited to the few well-paved roads of the urban areas. It is true that the self-starter made the automobile a more convenient vehicle; however, its usefulness was dependent upon good roads built with public money.

I think at this time that the aircraft industry has reached a point in its growth which is comparable to the automobile and truck in 1915. If an equal amount of public money is spent on airport improvement, such as better locations of airports, super-highways, and high-speed transportation from existing airports to the centers of cities, I believe everyone would agree that the use of the airplane, particularly for long distances, would increase materially.

In view of the past policy of this country in relation to public transportation, I do not think this so-called public subsidy of the aircraft industry is too great to expect, especially in view of what has been done for railroads and the automobile.

D. F. MARSHALL, Chief
Industrial Planning Branch
Los Angeles AAF Procurement
Field Office
Air Materiel Command.

Bouquet, Not Brickbat

Editor, Western Industry:

Thank you for the story about the transportation picture in the Rocky Mountain area (Regional Review — Continental Divide, April issue). It is always pleasant to receive a bouquet such as this one, instead of the brickbat which is often tossed in our direction. I hope that our service will continue to commend your consideration.

RALPH BUDD, President
Burlington Lines.

Diesel Future

Editor, Western Industry:

Have just finished reading Mr. Belilove's article ("What's Ahead for Diesels," February 1948) and find that it was very interesting reading.

H. L. MORIARTY, Chief Engineer
The Denver and Rio Grande
Western Railroad Company.

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UNITED STATES STEEL

THE WESTERN OUTLOOK..*News...Statistics...* 1

Eight per cent increase for carloadings; Department store sales follow upward trend of last year; Aluminum demand continues high, with potlines re-opening; Drouth may cut canning volume; Improved shipping assured for lumber industry; Shingle market slumps; California is only state to increase sugar beet acreage; Steel scrap situation eases up.

Employment Picture

WITH a 38 per cent slash in government appropriation, the Federal Bureau of Labor Statistics faces a somewhat barren future. In the eleven Western states only California, Washington, Arizona, Utah, Nevada, Montana, and, vaguely, Oregon, still submit their employment figures. Oregon is described as "vague" due to the fact that the quantity of their reports cannot be questioned, but the quality and confusion in them make a headache for a compiler, who innocently desires only the manufacturing employment figures each month.

So far, the Federal government has supplied a staff of expert statisticians for each state which attempts to correlate methods of compiling statistics so that results in all states will consolidate accurately into a national survey. The Bureau asked for an appropriation, and the squelching answer was the above mentioned cut.

This means that unless the states are able and willing to furnish their own money to set up a bureau, there will be no statistics forthcoming. If a state does activate its own bureau, the actual method of compilation will be up to the individuals, and the various methods of procedure will be more bewildering, and possibly less accurate than they have been in the past. This makes the Federal Bureau in Washington very unhappy when they attempt to issue figures for the country as a whole.

The House of Representatives has the attitude that labor statistic bureaus are luxuries, and not even very important ones; therefore almost any request for appropriation is turned down by this body. On the other hand, the Senate tends to be more indulgent, and the Federal Bureau pins its faith on this group. Any attempt to publicize or lobby for money to set up the various bureaus is usually bitterly contested by politicians or publications who brand all efforts in this respect as "propaganda."

Max D. Kossoris, Chief of the Federal Bureau of Labor Statistics in San Francisco, said that if the appropriation is finally made for the various states, then statistics will start coming through again probably after July 1. If the Bureau is turned down in its request, then those same blank spaces under Idaho, Wyoming, Colorado (now working on its own program) and New Mexico, in the charts below, will remain bleak and empty for a long time.

Employment in California manufacturing industries decreased by 1,700 between January and February as sharp reductions in ship repair and automobile production more than offset gains in apparel, canning, iron and steel, and aircraft. Current employment of 703,000 in the manufacturing group as a whole is 9,300 above the February 1947 level, primarily reflecting increases in nondurable goods industries, according to information obtained from the California Labor Statistics Bulletin.

The relative position of San Francisco Bay Area employment at the beginning of March was better than last year with claims for unemployment insurance down four per cent and Veterans claims down 30 per cent.

Estimated non-agricultural employment for the State of Arizona, excluding contract construction, increased approximately 1,000 between mid-January and mid-February, and exceeded February 1947 by 4,300 employees. All major industry groups with the exception of government employment participated in this increase.

The improvement in the economic condition of New Mexico since last year is indicated by a 20 per cent drop in total benefit payments from February 1947, and also by the 51 per cent increase in placements made over last February.

Practically no change occurred in the level of non-agricultural employment between mid-January and mid-February in Washington, according to a joint statement issued by John H. Davis, Commissioner of the Employment Security Department of the State of Washington, and Max D. Kossoris, Regional Director of the United States Bureau of Labor Statistics.

Total employment of non-agricultural wage and salary workers was estimated at 661,800 as of mid-February. This is about 12,100 above that of a year ago and practically unchanged from the January estimate of 663,300.

Commerce and Banking

Estimated carloadings for the Pacific Coast Transportation Advisory Board territory for second quarter of 1948 are 8 per cent above 1947. Perishables are up only 3.4 per cent, with

(Continued on page 29)

MANUFACTURING EMPLOYMENT

Estimated Number of 7mployees in Non-Agricultural Establishments—Source: U. S. Bureau of Labor Statistics

	MONTANA		IDAHO		WYOMING		COLORADO		NEW MEXICO		ARIZONA		UTAH		NEVADA		TOTAL MTN.	
	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
September	16,900	18,100	.....	.....	.....	.....	.....	.....	....	.....	12,500	12,700	.....	32,240	3,400	3,700	.....	.....
October	18,000	19,100	.....	.....	.....	.....	.....	.....	....	.....	12,700	12,600	.....	29,155	3,400	3,700	.....	.....
November	18,000	18,600	.....	.....	.....	.....	.....	.....	....	.....	12,700	13,000	27,830	26,874	3,500	3,700	.....	.....
December	17,900	18,500	.....	.....	.....	.....	.....	.....	....	.....	13,900	12,900	27,710	26,462	3,500	3,600	.....	.....
									1947	1948	1947	1948	1947	1948	1947	1948		
January	.....	.....	.....	.....	.....	.....	.....	.....	....	8,200	13,300	12,900	22,690	25,000	3,600	3.500	.....	.....
February	.....	.....	.....	.....	.....	.....	.....	.....	8,500	8,200	13,300	13,300	22,380	23,550	3,500	3,500	.....	.....

	WASHINGTON		OREGON		CALIFORNIA		TOTAL PACIFIC	
	1946	1947	1946	1947	1946	1947	1946	1947
September	179,400	191,700	135,846	145,500	738,800	743,000	1,048,646	1,078,750
October	175,400	183,900	.....	140,700	725,700	734,300	.....	.....
November	168,000	178,200	.....	133,100	705,500	716,000	.....	.....
December	166,000	174,600	.....	130,000	705,800	714,900	.....	.....
	1947	1948	1947	1948	1947	1948		
January	162,300	172,900	... ..	.....	697,100	704,100	.....	.....
February	166,100	173,000	.....	.....	693,700	703,000	.....	.....

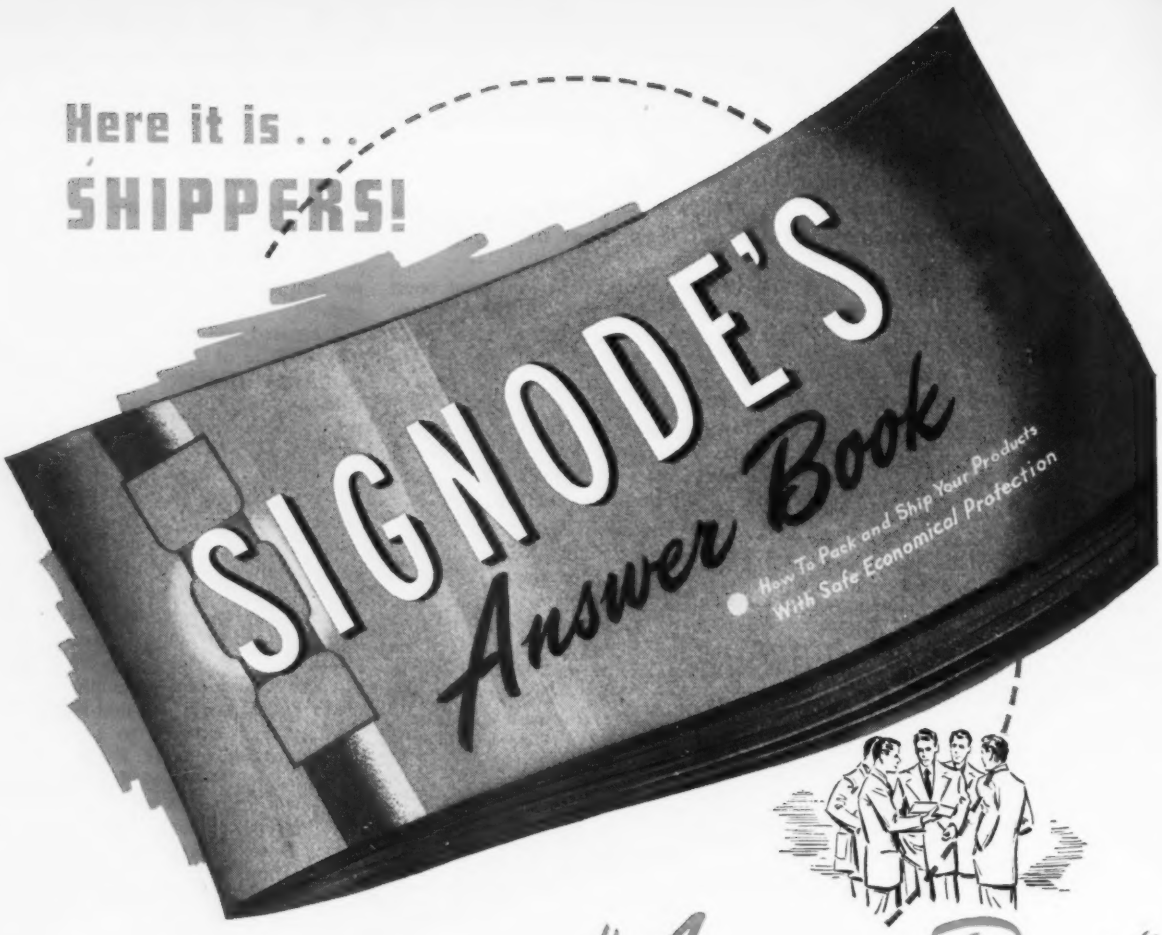
INSURED UNEMPLOYMENT

(Under all programs: figures in thousands. From Social Security Board)

Week ending	Ariz.	Colo.	Idaho	Mont.	Nev.	N. Mex.	Utah	Wyo.	Total Mtn.	Calif.	Ore.	Wash.	Total Pacific
Sept. 6	5.7	4.1	1.2	1.4	1.4	2.1	3.4	.3	19.6	164.4	10.9	24.5	199.8
Oct. 4	4.3	2.5	.7	1.1	1.3	1.7	2.3	.2	14.1	138.3	8.4	21.3	168.0
Nov. 8	4.1	2.5	1.3	1.4	1.5	2.0	3.6	.3	16.7	134.1	14.7	24.6	173.4
Dec. 6	4.7	4.2	3.9	2.9	1.8	3.2	4.3	.6	25.6	176.4	19.9	36.3	232.6
Jan. 3	5.1	6.5	6.6	4.7	2.0	5.0	6.3	1.1	37.3	204.2	27.2	45.7	277.1
Feb. 7	6.3	8.8	8.0	7.1	2.5	5.8	7.9	2.0	48.4	195.2	23.1	47.7	266.0

Here it is . . .

SHIPPERS!



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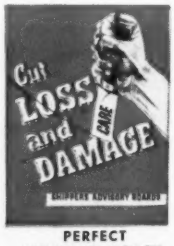

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Commerce & Banking—*(Cont. from p. 27)*

oranges and grapefruit 9.2 per cent off, but apples up 25 per cent, bananas 29.5 per cent, dried fruits 45.2 per cent and frozen foods 40.3 per cent. Among other products, greatest gains are shown by sugar beets 68.4 per cent; cotton 47.4 per cent, straw and alfalfa 40 per cent, salt 31 per cent, gravel sand and stone 29.4 per cent, brick and clay products 27 per cent, iron and steel 21 per cent, sugar, syrup and molasses 20.9 per cent. Automobiles and trucks were down 24 per cent, aircraft and parts 75.7 per cent, explosives 25 per cent, chemicals 10.5 per cent.

Fuels

Growth of the West means more people to share its gasoline—not too happy news at this time of tightening supplies. Taxable sales of motor fuel in the five Pacific Coast states during the past year have been nearly 13 per cent higher than in the preceding year.

While some of this increase is due to more new cars registrations show that there are more of them on Western roads. California, for instance, gained 444,271 new vehicles during 1947, largest single year's increase in the state's history. Since the first of the year, however, West Coast gasoline use has dropped off to show a much smaller gain above a year ago.

Vacation season's prospective demands for gasoline nevertheless have both the petroleum industry and Congress worried. The House Interstate Commerce Committee has recommended that (1) the Commerce Department pinch down on export of crude oil and lubricants (as already was done in the first quarter of 1948) and (2) that the petroleum industry develop some voluntary program to protect the gasoline needs this summer of essential users, including farmers during the harvest season.

Two new areas in the Northwest will be subjected to exploratory drilling in the hunt for additional oil and gas resources. At least two major companies are known to be laying plans for drilling in the southwestern portion of Montana in the area bordered by Yellowstone Park and Idaho. A wildcat organization is reported to be ready to start a hole in southwestern Idaho. The Union Oil Co., drilling on the Olympic peninsula in western Washington, brought out gas at about 20 per cent of the commercially feasible rate. Further investigations of the hole are in progress.

Intermountain coal production dropped to virtually nothing the last half of March because of the pension walkout of United Mine Workers of America. In Utah only a few small wagon mines continued to operate. Prior to the labor tieup operations were humming along at normal after a long period of subnormal production arising from a combination of manpower, housing and railroad car shortages.

Natural gas sales as reported to the American Gas Association by sample companies indicate that for the fourth quarter of 1947 total sales were up 17.3 per cent in the Pacific states and 7.3 per cent in the mountain area. Percentage changes by class of service were: residential: Pacific, +6.0, mountain, +17.3; commercial: Pacific, +15.0, mountain, +18.1; industrial: Pacific, +31.2, mountain, +0.5. Manufactured gas sales for the Pacific states were off, however, as follows: residential, —1.9; commercial, —2.4; industrial, —5.6.

The Pacific states gained 124,629 residential customers for natural gas, which may be a good index to population increase. In the mountain states the gain was 23,214, which may be partly accounted for by change-overs from coal. Gain in commercial customers in the Pacific states was 15,615, in the mountain states 41,196. Gain in industrial customers was 338 in the Pacific states, in the mountain states 80.

Electric Energy

Despite the fact that northern California is under an over-all 20 per cent purchased power cut on account of the drouth, industry apparently will be able to maintain practically full production by utilizing alternative sources, such as diesel and gas engines and induction motors, installed as fast as delivery can be made. An emergency agreement between PG&E and the Reclamation Bureau for Shasta Dam power, plus surplus imported from southern California, also are helping out.

The Pacific Northwest crisis is temporarily past and Bonneville is giving aluminum reduction works additional power allocations.

Steel

The scrap situation is definitely easing up, as a result of the breaking up of ships. Two more lots of 40 LSTs each, plus 40 to 50 cargo ships put on the block by the Maritime Commission, have helped the supply considerably, and a softening of scrap prices is due. Wrecking is going on at various yards all the way from Seattle to southern California.

(Continued on page 31)

WHOLESALERS' SALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

MOUNTAIN

	Automotive Supplies	Change	Electrical Goods	Change	Furn. and house furn.	Change	Groc. and foods exc. farm prod.	Change	General Hardware	Change
August	631	+ 7	3,653	+ 52	...	..	3,880	+10	1,816	+10
Sept.	396	— 7	3,552	+ 75	...	..	4,337	+16	1,695	+ 7
Oct.	828	+ 5	4,104	+ 58	397	—18	5,227	+ 9	2,350	+33
Nov.	654	+24	3,924	+ 51	...	..	3,906	— 1	2,015	+16.
Dec.	635	+ 3	5,368	+ 27	...	..	3,647	— 7	1,513	— 3
Jan.	476	0	2,712*	+ 46	406	+ 9	1,442	....	....	....

PACIFIC

											Industrial Supplies	Change	Lumber & bldg. mat.	Change	Mch. equip. and supplies excl. elec.	Change	Metals	Change
Aug.	1,266	+ 1	12,078	+ 34	1,536	+ 21	7,780	+10	6,201	+22	1,481	—25	1,341	+34	664	+ 9	696	— 1
Sept.	3,211	— 4	14,718	+ 40	3,545	+ 37	13,729	+19	5,475	+11	520	— 9	1,587	+63	431	+ 9	799	— 4
Oct.	3,245	—11	18,232	+ 39	2,126	— 1	11,574	+ 6	8,915	+ 5	603	+ 3	1,696	+55	791	—10	818	+ 5
Nov.	1,790	— 5	13,345	+ 30	329	+ 34	13,838	+ 3	7,260	+14	466	—26	1,682	+42	561	—34	694	+13
Dec.	2,560	—13	21,380	+ 37	1,581	+ 5	13,302	— 5	7,480	— 2	615	—12	1,444	+36	627	—32	670	+ 7
Jan.	1,719	—18	10,858*	+ 31	1,634	+ 9	3,475	....	6,131	+ 6	660	—17	1,732	+30	521	—13	727	+ 5

*Full-line wholesalers.

INDEX OF DEPARTMENT STORE SALES

Index numbers, 1935-39 daily average=100 with seasonal adjustment. Compiled by Federal Reserve Bank.

	Total 12th Fed. Res. Dist.		Southern California		Northern California		Portland		Western Washington		Eastern Washington and northern Idaho		Utah and southern Idaho		Phoenix	
	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
August	324	338	330	351	286	296	298	317	364	372	325	362	361	363	439	473
September	313	321	327	339	285	289	295	314	334	339	296	315	319	312	432	442
October	319	324	349	349	284	286	288	325	353	363	276	286	301	294	346	374
November	320	340	355	371	287	305	287	330	347	364	255	278	289	313	361	437
December	321	352	343	388	287	318	304	345	348	363	312	340	366	358	423	477
	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948
January	314	340	338	373	275	291	301	352	330	349	328	334	365	380	411	457

FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states.

(Compiled from Assn. of Am. R.R. weekly reports)

	Carloadings		Received from Eastern Connections	
	1946	1947	1946	1947
*August	694,085	728,578	374,898	381,068
*September	402,592	825,668	394,409	404,771
October	786,228	701,972	398,110	382,413
November	662,225	699,897	309,743	340,873
December†	526,827	519,397	289,873	281,887
	1947	1948	1947	1948
January	480,719	472,567	250,315	250,104

*5-week period. †Incl. 4 weeks of following January.

BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Fed. Res. System in 7 western cities: L.A., S.F., Portland, Seattle, Tacoma, Spokane, and Salt Lake.

(Average of Wednesday reports)

1947	
October	1,857
November	1,899
December	1,943
1948	
January	1,976
February	1,999
March	2,000

BANK DEPOSITS

(In millions of dollars—adjusted)

Daily average month, all member banks in 12th Federal Res. Dist. Demand deposits excluding U. S. Gov't deposits, cash items in process of collection, and interbank deposits.

	Net Demand Deposits	Time Deposits
1947		
September	8,813	5,920
October	8,905	5,949
November	8,978	5,949
December	9,114	5,938
1948		
January	9,095	6,015
February	8,836	6,044

UNION PACIFIC

Industry is on the Move .... Westward

UNION PACIFIC RAILROAD COMPANY
OMAHA 2, NEBRASKA

G. F. ASHBY, PRESIDENT

To American Industry:

The Union Pacific West offers industry proximity to products of ranch, mine and forest...ample power, fuel, water...healthful living conditions in scenic, recreational regions...and native-born, high-type labor.

Our faith in the future of this vast territory is confirmed by our current 200-million-dollar investment program for new equipment, improved and expanded facilities to provide shippers and travelers with the utmost in rail transportation.

We are at your service.

Yours very truly,

G F Ashby

President,
Union Pacific Railroad

George F. Ashby

* One of a series of advertisements based on industrial opportunities in the states served by Union Pacific Railroad.

Unite with Union Pacific in selecting sites and seeking new markets in California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, Wyoming.

*Address Industrial Department, Union Pacific Railroad
Omaha 2, Nebraska

UNION PACIFIC RAILROAD

Road of the Daily Streamliners

Steel—*(Continued from page 29)*

Geneva was on a stand-by basis early in May on account of the coal strike, but Fontana was able to continue production because of a large coal stockpile.

Non-ferrous Metals

Aluminum demand is continuing high this spring as compared to last spring when a slump was beginning to be felt. Orders are continuing to run about three to four months ahead. Permanente Metals Corp. is shipping no pig or ingot except to the casting industry and most of those shipments are being confined to users in the Northwest. The greater part of the output at Mead and at Tacoma is being rolled at the Trentwood plant.

Permanente started operation of its sixth potline at Mead early in March and plans to continue as long as power is available. Aluminum Corp. of America has been granted permission to continue operation of its fifth potline at Vancouver which was to have been closed down on April 1 because of a shortage of power. Bonneville Power Administration has agreed to supply power to both plants until August 1. Reynolds is scheduled to reopen its Longview, Wash., plant in the near future and to be in full production again by the end of June.

Non-ferrous metal mining is still on the upgrade. A strong price structure, prospects of the government coming heavily into the market for stockpiling purposes and increasing availability of manpower are all encouraging factors from the operators' standpoint. One cloud on the horizon is the upcoming wage negotiations, with the International Union of Mine, Mill & Smelter Workers embroiled in a bitter secessionist fight over Communism.

Lead and zinc continue to be in short supply with some talk of another raise in prices on lead. The output in the Coeur d'Alenes of Idaho and the Metalline Falls district of Washington is still limited by lack of an adequate labor supply, a situation which existed all through last year.

Chemicals

Reports from the National Farm Chemurgic Conference held two months ago in Omaha tell of a demonstration of a new type of automotive carburetor especially designed for the utilization of ethyl alcohol as a fuel. The carburetor was displayed by Joseph E. Seagram & Sons, distillers of Louisville, Ky., who last fall established a fellowship at Washington State College for the study of problems in connection with the distillation of alcohol from waste and low grade farm products, primarily cull fruit, in the Northwest.

If to this picture is added the reported interest being shown by Anheuser-Busch in the production of alcohol from waste wood, it might be surmised that there is definitely something in the air as concerns the field of alcohol production in the Northwest. Incidentally, the War Assets Administration has not as yet arrived at a final disposition for the alcohol-from-wood plant at Springfield, Ore.

Canning and Packing

Northern California's drouth may cut off some summer irrigation, thereby causing cling peaches to size up small and likely reducing the tonnage, and making tomato production highly uncertain. Plentiful rains in Hawaii after several dry seasons will bring up the pineapple yield considerably, but the greatest effect will be on young plants which will bear in the 1948 season. Canning pea plantings in the Blue Mountain district in the Northwest will be 14 per cent under last year. Acreage for frozen peas slightly increased.

Canners League of California figures as of March 1 show inventory position strong except for tomato juice. February movement, with March 1 stocks, was as follows, in cases (fruits, No. 2½ can basis, vegetables, actual cases):

(Continued on page 33)

ELECTRIC ENERGY

(Production for Public Use—In thousands of kilowatt hours. Source: Federal Power Commission)

	Mountain		Pacific Northwest		California		Total Pacific	
	1946	1947	1946	1947	1946	1947	1946	1947
August	982,553	1,102,713	1,088,455	1,344,586	1,700,150	1,823,537	2,788,605	3,168,123
September	924,999	1,081,065	1,109,086	1,325,425	1,547,003	1,695,630	2,656,089	3,021,055
October	992,528	1,059,691	1,251,343	1,422,487	1,523,254	1,654,464	2,774,597	3,076,951
November	937,678	1,064,947	1,302,623	1,484,350	1,443,167	1,531,154	2,745,790	3,015,504
December	1,002,170	1,191,939	1,413,478	1,606,168	1,490,316	1,620,287	2,903,794	3,226,455
	1947	1948	1947	1948	1947	1948	1947	1948
January	1,061,564	1,228,508	1,477,873	1,635,440	1,466,716	1,605,642	2,944,589	3,241,082

BITUMINOUS COAL AND LIGNITE

(In thousands of tons. From Bureau of Mines)

	(Colo.-N. Mexico)		(Wyoming		(Utah)		(Montana)		(Wash.-Alaska)	
June	503	523	444	608	472	560	300	150	118	107
July	464	298	615	345	548	394	293	182	114	71
August	573	490	736	530	566	504	275	255	122	104
September	679	628	745	650	590	513	343	274	124	116
October	828	640	903*	797	627	505	402	318	151	152
November	559	660	636*	793	442	560	308	309	115	139

*Includes Idaho.

PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)
(From Bureau of Mines)

	CRUDE PRODUCTION (Barrels, daily avg.)	TOTAL DELIVERIES (Thousands of barrels daily) GASOLINE		GAS OIL & DIESEL		HEAVY FUEL OIL		ALL PRORUCTS	
	1947	1946	1947	1946	1947	1946	1947	1946	1947
August	917,684	325	370	67	100	355	362	885	985
September	914,747	318	370	77	113	339	386	860	1,030
October	921,463	320	356	100	139	326	375	870	1,010
November	929,552	293	317	128	138	363	380	896	978
December	927,197	308	349	146	173	416	441	993	1,091
	1948	1947	1948	1947	1948	1947	1948	1947	1948
January	930,953	313	323	177	162	420	368	1,035	990

NATURAL GAS

(CALIFORNIA)
(Compiled by Roy M. Bauer, gas supply supervisor, Southern California Gas Company)

	—Number of Consumers—		*Utilization (in thousands of cubic feet)			
1947	Domestic and Commercial	Industrial	Domestic and Commerc'l Sales	Industrial Sales	Electric Generation	Net Receipts from Producers
Avg. Apr.-June	2,264,203	5,615	12,978,115	10,812,647	2,609,401	27,819,226
July	2,274,530	5,412	9,276,728	12,092,643	3,819,581	28,197,954
August	2,284,793	5,392	8,564,746	13,716,465	4,945,553	31,563,238
September	2,298,991	5,445	9,191,805	14,857,652	4,651,291	31,461,374

**Utilization figures do not include company use, storage, and unaccounted for.*

IRON AND STEEL

Western Area of the United States
From American Iron and Steel Institute i(n net tons)

	Pigiron Output	Percent of Capacity	Steel Output	Percent of Capacity
September	188,749	90.7	350,937	88.3
October	193,489	89.8	378,227	92.0
November	184,861	88.6	374,169	94.0
December	209,815	97.6	397,905	97.0
January	211,208	95.4	398,553	92.8
February	198,927	96.2	379,291	94.5

Alloy Steel

	Output	Carbon Ingots, Hot Topped*
September	4,321	7,228
October	5,855	11,769
November	5,318	10,434
December	3,717	9,134
January	3,445	8,588
February	4,888	4,850

*Included in total steel.

COPPER

(Short tons. From U. S. Bureau of Mines)

	ARIZONA		UTAH		MONTANA		NEW MEXICO		NEVADA		TOTAL WEST'N STATES	
	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
August	26,475	29,870	13,780	23,620	4,950	4,160	4,098	5,930	3,300	4,430	53,481	68,735
September	28,000	29,800	17,350	23,200	4,700	4,000	3,961	5,810	3,400	4,160	54,233	67,731
October	30,650	30,836	17,700	16,470	4,800	4,690	4,195	5,558	3,600	3,990	61,770	62,373
November	28,300	28,885	17,425	16,155	4,800	5,100	4,000	5,435	4,200	3,900	59,498	60,269
December	30,300	30,000	17,800	22,500	4,850	4,900	4,100	5,200	4,400	4,000	62,245	67,375
	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948
January	30,700	31,235	22,550	22,360	5,350	5,000	4,614	6,046	3,800	3,500	67,383	68,920

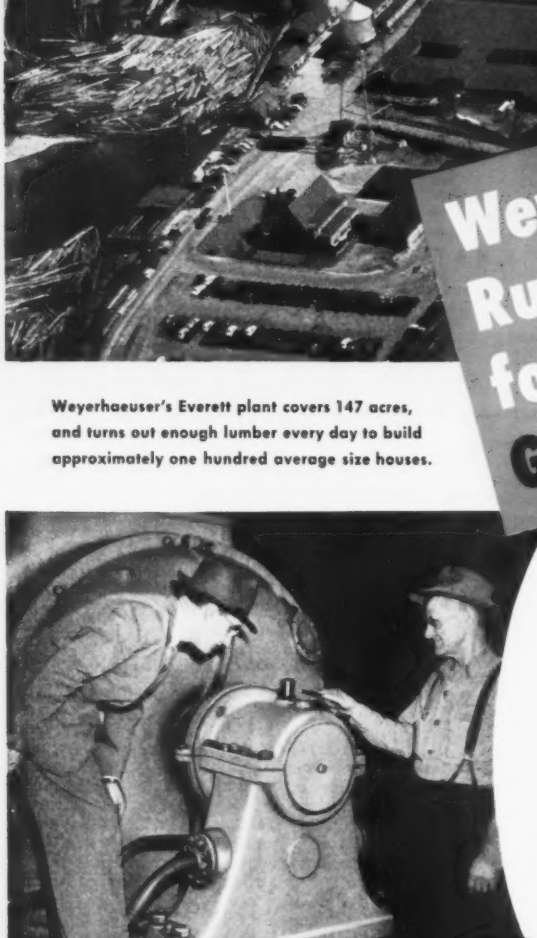
ZINC

(Short tons. From U. S. Bureau of Mines)

	ARIZONA		COLORADO		IDAHO		MONTANA		NEVADA		NEW MEXICO		UTAH		TOTAL WESTERN STATES	
	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948
January	4,600	3,920	2,960	3,545	6,700	6,800	1,600	3,965	2,070	1,200	3,601	3,485	3,420	3,200	26,451	27,535

Weyerhaeuser Turbine Runs 6 Days a Week for 33 Years.....on GARGOYLE DTE OIL

Weyerhaeuser's Everett plant covers 147 acres, and turns out enough lumber every day to build approximately one hundred average size houses.



Chief Engineer Harry Brown, a veteran of 25 years with Weyerhaeuser, points out oil sight feed to Joe Falkner, General Petroleum Corp.

Three steam turbines in Weyerhaeuser Timber Company's Everett plant generate enough electricity for a city of forty thousand people. The first of these veteran turbines was installed in 1914 and has been continuously lubricated with Gargoyle D T E Oil ever since. Highly satisfactory operation and low maintenance cost were so convincing that other turbines added are all lubricated with Gargoyle D T E. Turbine lubrication is only one part of the complete lube engineering service supplied western industrial firms by General Petroleum. A specially trained, experienced engineer is available to make a survey of your plant and make recommendations for a lubrication schedule. Many industrial plants have made substantial savings in time and money by following G. P. lubrication recommendations. Why not find out for yourself how effective such a program can be? Just ask your nearest G. P. branch or distributor.

GARGOYLE DTE Lubricants

GENERAL PETROLEUM CORPORATION

(A Socony-Vacuum Company)

A Progressive Member of a Progressive Industry.

Canning & Packing—*(Cont. from page 31)*

apricots, 156,269, on hand, 1,060,615; cherries, 2,329, on hand, 6,687; pears, 162,998, on hand, 299,725; freestone peaches, 85,863, on hand, 409,047; cling peaches, 1,090,614, on hand, 2,899,123; fruit cocktail, 756,628, on hand, 1,147,589; fruits for salad, 23,856, on hand, 35,847; mixed fruits, 16,447, on hand, 181,589; round tomatoes, 550,457, on hand, 2,474,907; Italian tomatoes, 31,333, on hand, 48,824; tomato juice, 854,419, on hand, 4,054,809. Asparagus carryover as of March 1 was 174,132 cases, spinach, 266,284 cases.

Northwest Canners Association report stocks on hand as of March 1, in cases, No. 2½ can basis: freestone peaches, 364,045; prunes, 1,135,789; pears, 1,368,804; apricots, 58,166; sweet cherries, 57,952; raspberries, 161; blackberries, 12,684; boysenberries, loganberries and youngberries, 2,794; apples, 286,887; apple sauce, 57,928.

Lumber

Construction in the three West Coast states absorbed about 60,000,000 more board feet of Douglas fir lumber in the first two months of this year than it did in the similar period last year. Inasmuch as eastern markets had been badly disrupted by a severe winter, the Western activity was instrumental in leveling out demand. Production has been running about five per cent ahead of the five-year average; shipments are ahead of last year by about the same amount; and orders are slightly less than last year, but well ahead of the same period of 1946.

Western pine figures show orders, production and shipments all running ahead of the same period last year. Production has made the biggest gains, but is still running behind orders and shipments.

In a conference during March between lumbermen and railroad officials, lumbermen were assured that shipping conditions this year would be materially improved over last year. K. C. Batchelder, traffic manager for the West Coast Lumbermen's Association, estimated that the Douglas fir industry had suffered losses of about $9,500,000 during 1947 due to inability of making shipments on time.

Bids at public timber sales are showing some signs of becoming more conservative. At a sale of O. & C. timber during March bids exceeded appraised prices by only about 10 per cent as compared with 50 per cent or more which was common last year.

The shingle market shows definite signs of a pinch. At least one authority in the field has reported that the shingle market is in a slump. The M. R. Smith Shingle Co., which has operated a plant at Moclips, Wash., since 1914, halted its operations in March, reportedly because of market conditions which resulted in slow disposal of the firm's output.

LUMBER

(In thousands of board feet)

From West Coast Lumbermen's Association (Douglas Fir, Sitka Spruce, Port Orford Cedar, West Coast Hemlock, Western Red Cedar):

Year through February	1946	1947	1948
Production	1,176,965	1,135,745	1,251,495

From Western Pine Association figures (Idaho White Pine, Ponderosa, Sugar Pine and associated species):

Year through March	1947	1947
Production	578,376	659,430

Pulp and Paper

Hopes that at least two pulp and paper mills would soon be established in southeastern Alaska appear to have gone glimmering as a result of the dispute between the Forest Service and the Alaskan Indians claiming title to the timber lands. Puget Sound Pulp & Timber Co. has abandoned plans for the establishment of an $18,000,000 mill near Ketchikan after spending some $75,000 in preliminary surveys because of threats of lawsuits made by the Indians' representatives.

PULPWOOD

(Pacific Northwest)

(Cords of 128 cu. ft., roughwood basis. Source: Bureau of Census)

	Receipts	Consumption
July	362,477	344,851
August	395,124	269,009
September	459,427	264,641
October	334,649	281,753
December	250,992	253,600
January	235,036	280,630

Plywood

Current production of plywood in the Pacific Northwest is estimated at about 38,000,000 sq. ft. per week. Announcements during the month of March by three present or potential producers indicates that new plants or addition of new facilities to existing plants will add about 1,500,000 sq. ft. to the weekly production capacity by the end of the year.

SOFT PLYWOOD

From Bureau of the Census
(In thousands of square feet)

	1946	1947
August	126,631	137,042
September	129,270	146,985
October	149,600	170,325
November	129,635	144,637
December	121,816	149,999
	1947	1948
January	140,058	156,567

Sugar

California has moved into the lead as the largest sugar beet producing state, and is the only one to show a larger indicated acreage for 1948 than for 1947. Ending of government support last year has tended to make refiners and growers cautious, but California will show an increase, due largely to the development of Imperial Valley, where there is a contest for acreage on between Holly, Union and American Crystal. The valley's proximity to the Los Angeles market is an inducing factor.

Prospective acreage for 1948 as reported by USDA, compared with harvested acreage last year, is:

	1947 harvested	1948 intended
California	163,000	176,000
Colorado	176,000	155,000
Idaho	116,000	100,000
Montana	82,000	77,000
Utah	47,000	45,000
Wyoming	39,000	38,000

Despite a reduction in quota of permitted imports and domestic sales, prices have not stiffened. Apparently buyers have been using up accumulated stocks instead of making new purchases.

Production figures for 1947, in refined bags of 100 lbs. weight, are as follows:

California*	9,100,362
Colorado	7,565,308
Idaho	4,368,107
Montana	2,109,762
Utah	2,109,762
Nebraska	2,069,013
Oregon	1,644,437
Washington	984,393

*Includes production from 1947 plantings in Imperial Valley, to be harvested in spring of 1948.

Hawaii's 1948 production of cane is expected to be about 900,000 tons, 100,000 tons above last year. Some fields out of use during the war are just getting back into production, and the islands have had good rains this season, after several dry years. Some raws are coming in from the Philippines, where production is now 200,000 tons, as against 1,000,000 tons prewar. California cane refineries are running at capacity, but demand is slow and prices off.

Flour

Although the spring months are normally slow in the flour business, the 1948 season so far is deader than for many years. Bakery business is slow, grinds are down, mills running part time. Wheat plantings in Washington will be the largest in the state's history, with a fractional increase seeded over last year.

Apparel

Ambitious promotion plans are being formulated by California Apparel Creators to tie in the forthcoming season's styles with next year's California Centennial celebration. Featuring the colors of "discovery red, Sutter brown, nugget gold, and Sierra green," the new sportswear and women's clothing lines will automatically start fashion writers propagandizing for the West, while harnessing for the industry the extensive national publicity planned for the state's celebration.

Market trends are mixed. Surprisingly, some makers of luxury lines are doing excellent business despite the general slump in demand for non-essentials. Capitalizing on still-brisk business at Western resorts, makers of expensive suede leather outfits and other "dude ranch" wear are flourishing. Tightening of consumer purse strings has hurt jewelry sales but has boomed costume jewelry.

Best generalization that can be made is that business is good among well-established firms with good merchandising connections or with novel and unusually desirable products; while less aggressive newcomers, and those with "quickie" products aimed at the easy-money trade, are running into difficulties.

APPAREL

(In thousands of dollars)

Total Women's, Misses' & Juniors' Outerwear	Los Angeles	San Francisco
April	7,118	1,721
May	4,505	1,731
June	4,188	1,383
July, August, September	23,245	6,699

	Men's Overalls (thousands of dozens) California	Men's Wool Work & Dress Trousers (thousands of units) California
May	24.8	103.3
June	27.4	95.1
July	16.7	87.2
August	22.1	110.6
September	26.1	102.2
October	29.2	128.3

CEMENT

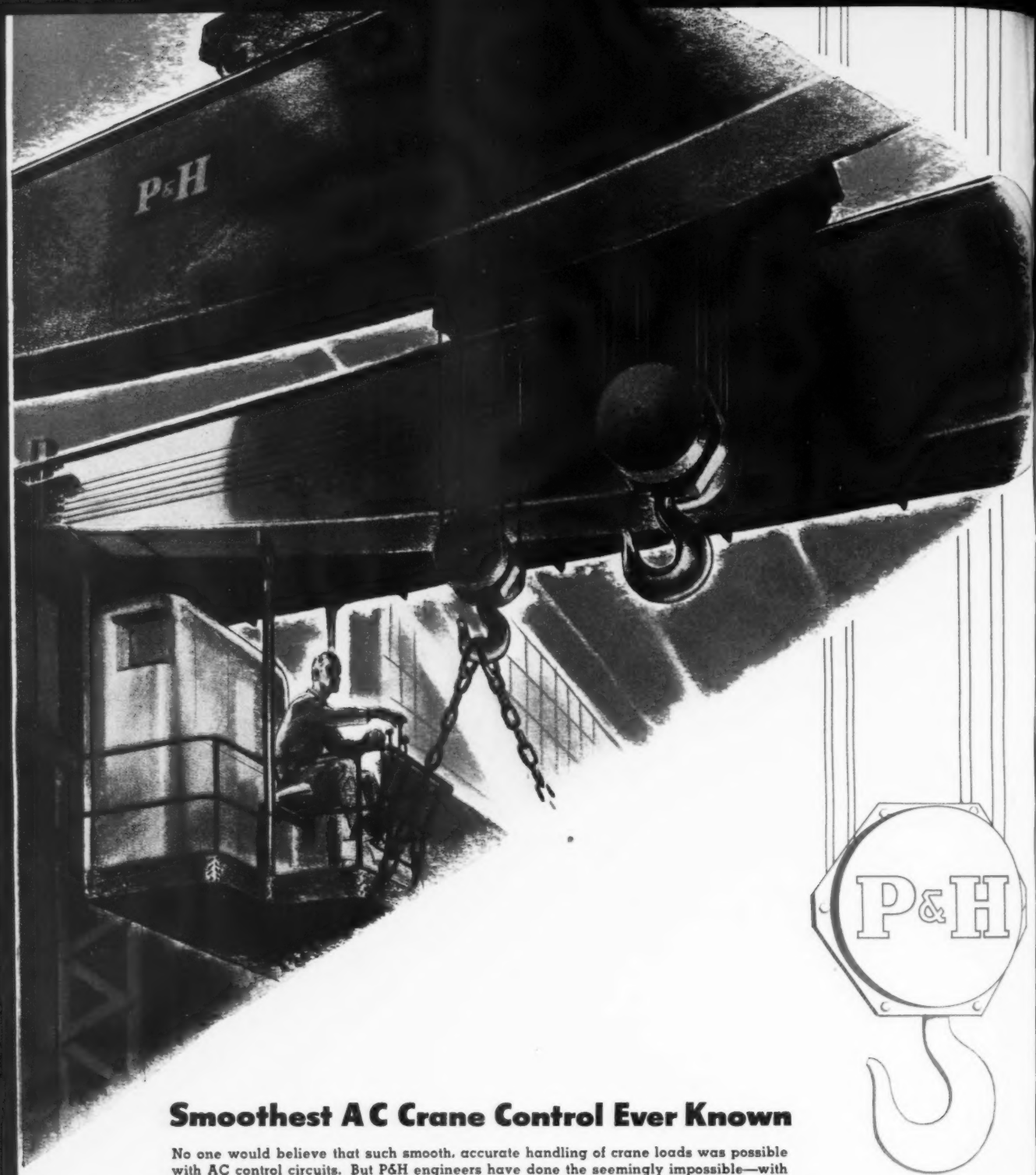
(In thousands of bbls.; from U. S. Bureau of Mines)

	—California—		Oregon - Wash.		Colo.-Wyom. Utah - Idaho Mont.	
	1946	1947	1946	1947	1946	1947
July	1,690	1,899	504	563	391	396
Aug.	1,668	1,949	495	585	398	433
Sept.	704	643	370	332	135	138
Oct.	487	517	340	353	123	118
Nov.	624	581	367	400	144	132
Dec.	645	596	453	564	223	177

WHEAT FLOUR

(In thousands of sacks; from Bureau of the Census)

	Ore.-Wash.	Montana	Utah	Colorado	California	Total
August	1,613	362	317	467	368	3,127
September	1,498	352	327	462	321	2,960
October	1,760	336	322	484	447	3,349
November	1,583	311	281	446	385	3,006
December	1,446	282	272	481	364	2,845
January	1,480	275	264	486	363	2,868



Smoothest AC Crane Control Ever Known

No one would believe that such smooth, accurate handling of crane loads was possible with AC control circuits. But P&H engineers have done the seemingly impossible—with the new Magnetorque Control. By using electromagnetic forces, and pre-loading the hoist motor, the Magnetorque not only excels any crane control ever known in its speed-load characteristics, but it also eliminates the old mechanical load brake with its adjustments, friction linings, and maintenance of auxiliary equipment.

Before you invest in your next crane, get the facts about the Magnetorque — another exclusive added value built by P&H—America's leading crane builder.

P&H

OVERHEAD CRANES

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Milwaukee 14, Wis.

HARNISCHFEGER CORPORATION

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ADDED VALUE

OVER 15,000 P&H CRANES SERVE AMERICAN INDUSTRY . . . FAR MORE THAN ANY OTHER

Spotlight on the NEWS

WESTERN INDUSTRY
FOR MAY, 1948

VOLUME XIII NUMBER 5

One answer to the complaint that not enough apprentices are being trained is an event that took place in Oakland April 15, namely, the nation's first mass graduation of apprentices, under a joint management-labor program. It was done with a flourish, in the Oakland Auditorium, with NAM and labor on the speakers' list and Assistant Secretary Andrews of the Navy Department giving the main address.

These 620 newcomers in industry represented 38 crafts where a four-year course had been taken and three crafts with three years of instruction. Their training was in two phases, on the job in the plant (not just one plant, but a series of them), and in related instruction in the schools tailored for each particular craft. Thus they get a more rounded knowledge of their trade than in just on-the-job training in a single plant—in other words, they are turned out as "thinking mechanics."

Joint management-labor committees supervise their training and conduct the examinations so the apprentices get both sides of the picture and emerge as journeymen with a more neutral viewpoint than would otherwise be the case. The training program is in fulfilment of California's labor standards act of 1939.

Let Industry Do It

Secretary of Interior Krug's proposal for three commercial-size synthetic oil plants to be built at a cost of $400 million, has brought complaints from oil men that they can't offer adequate plans within the 120-day deadline given, and that a group of oil companies, rather than the Government, should build and operate the project.

Union Oil's A. C. Rubel said shale is the West's most logical source of synthetic fuels, that supplementary sources of fuel and diesel oil will be needed on the Pacific Coast in the non-too-distant future, and that private industry should develop facilities for 25,000 barrels daily of shale oil, to be shipped West for refining and be marketed at a loss to be absorbed by the Government.

Four increases in the price of crude oil during the past year have brought natural petroleum within hailing distance of the synthetic product. A Bureau of Mines engineer testified that recent estimates now put the cost of shale oil at $2 to $2.50 a barrel for a crude equivalent in quality to natural crude now selling at $1.75.

Denver a Meat Center

Chicago's stockyards have passed their peak and are on their way out, although it may take years for big changes to come, according to Matthew Landers of Landers Packing Company, Denver. The logical successor is Denver, he points out, because it is the center of the cattle raising area.

Cattle moved the long distance into Chiago lose weight, are in danger of bruising, have to be fed and watered en route, he says. Then they arrive in yards that are crowded and far from up-to-date. So why not do the packing close to the ranges and just ship the meat out?

Mr. Landers is much more definite about Denver's future position as the country's meat packing center than about wool processing in the West, about which there seem to be some uncertainties.

You Just Can't Win

You can't please everybody, and when it is two different branches of the government it's a bit tough.

The plywood industry appears to have been caught in a squeeze play, with the Federal Trade Commission accusing the Douglas Fir Plywood Association and 35 producers of engaging in a conspiracy to restrain competition, and the Department of Commerce office of industry cooperation asking industry representatives to assist in developing a program to channel plywood into housing construction.

To Burn, or Not

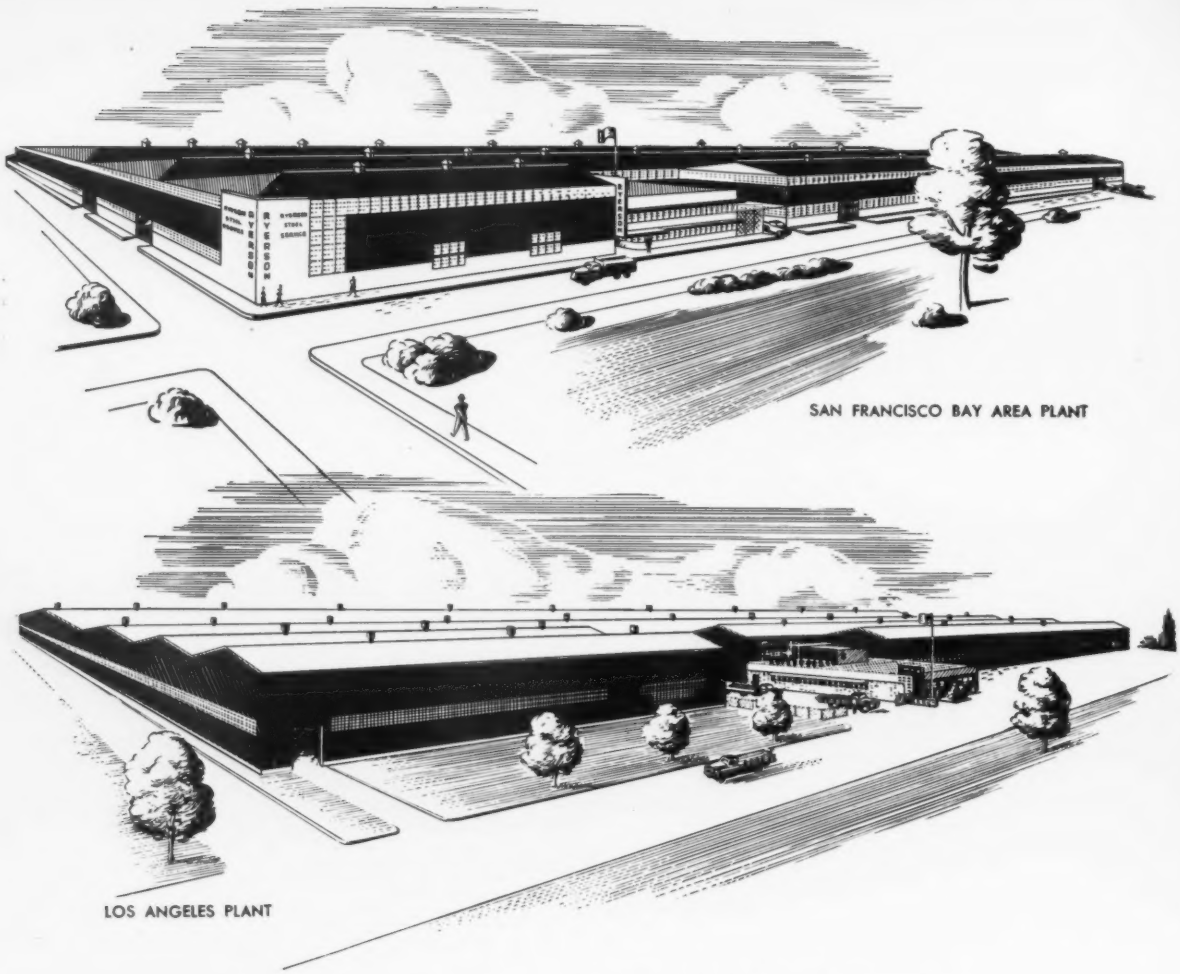
While wood waste in the Pacific Northwest is becoming too valuable for other purposes to burn as fuel, in northern Arizona the price of oil has forced two power companies to turn to wood waste, mainly sawdust. They have signed long term contracts with lumber companies to build new plants generating electricity with this type of fuel.

Behind the New Look

It's an ill wind that blows no one good. Caught in a squeeze between rising material costs and stiffening consumer resistance, manufacturers in the West's apparel industry are seeking short cuts that may enable them to absorb yardage advances and wage increases resulting from a series of strikes, so as not to raise their own prices inopportunely.

Much plant remodeling is going on and such improvements as conveyor belts to move material, realignment of machinery to cut waste motion, counterweighted pressing irons, air conditioning, better illumination, and many comforts for employees are being introduced in the hope of reducing unit costs.

Some Los Angeles manufacturers even are going to night school to study plant management and time-motion techniques.



Two Ryerson Steel Plants Now Serve the Great West

By now you may have heard about our new steel-service plant in Emeryville, California, across the bay from San Francisco. We began business there just last month—supplementing service from another new plant at Los Angeles. Already, the expanding industries of California and the whole Pacific Coast have found the new plants dependable as a source for steel from stock.

Like the Los Angeles unit, the plant at Emeryville offers quick shipment of thousands of kinds, shapes and sizes of steel. And like all thirteen plants in the nation-wide Ryerson network, it is expertly staffed, excellently equipped, and features a service perfected by more than a hundred years in the business of steel distribution.

Because of current demand the steel you need may not always be in stock. But, with two big plants here on the west coast working as a team, you will find we can usually take care of your requirements.

So for a single piece or a carload—or for help on any steel problem, do not hesitate to call us.

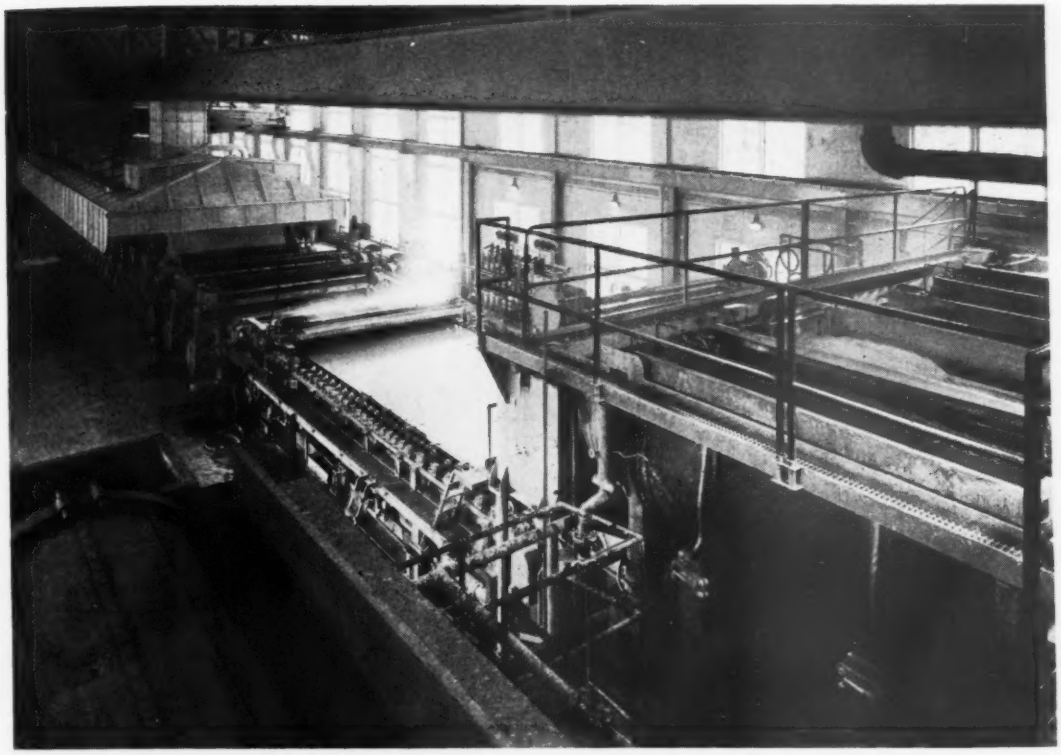
PRINCIPAL PRODUCTS

- BARS—Carbon & Alloy, hot rolled & cold finished
- STRUCTURALS—I beams, H beams, angles, channels, etc.
- TUBING—Seamless & Welded mechanical & boiler tubes
- PLATES and SHEETS
- INLAND 4-WAY FLOOR PLATE
- STAINLESS—Allegheny Metal plates, sheets, bars, tubing, etc.
- MACHINERY & TOOLS—metal working
- WIRE, Wire Rope, Chain, etc.

RYERSON STEEL

SAN FRANCISCO BAY PLANT: 65th & Hollis Sts., Emeryville, MAIL: Box 188 Emeryville, Calif. PHONE: Piedmont 5-8450 (From S. F. Zone Enterprise 10176)
LOS ANGELES PLANT: 4310 East Bandini Boulevard, Los Angeles, MAIL ADDRESS: Box 3817 Los Anelges 54, California PHONE: ANgelus 2-6141

PICTURE OF THE MONTH



THE INDUSTRIALIZED WEST . . . *Coated paper is now being made on the Pacific Coast in large quantities for the first time. Scene shows stock for one of the large national consumer magazines in its early stages, passing through the wet end of one of the two No. 6 paper machines newly installed in the West Linn, Oregon, mill of Crown-Zellerbach Corp.*

What Employees Want Told Them By the Company

By KENNETH H. SHAFFER
Manager of Production, Northern Division
Standard Oil Company of California
(Until recently General Personnel Manager)

WHERE workmen have the correct information, they come out with sound decisions. They want to understand the operation of their company and to be proud of their jobs and their boss. They want to feel that they have a part in it.

So it is highly desirable to find out what they want to know about it and what are the best means for getting the information over to them. The experience of Standard of California in that regard may be of general interest.

The interview method was used by an outside agency in a recent survey regarding Standard's house organ. We wanted to know if the magazine is worthwhile, if it furnishes what the workers want to know.

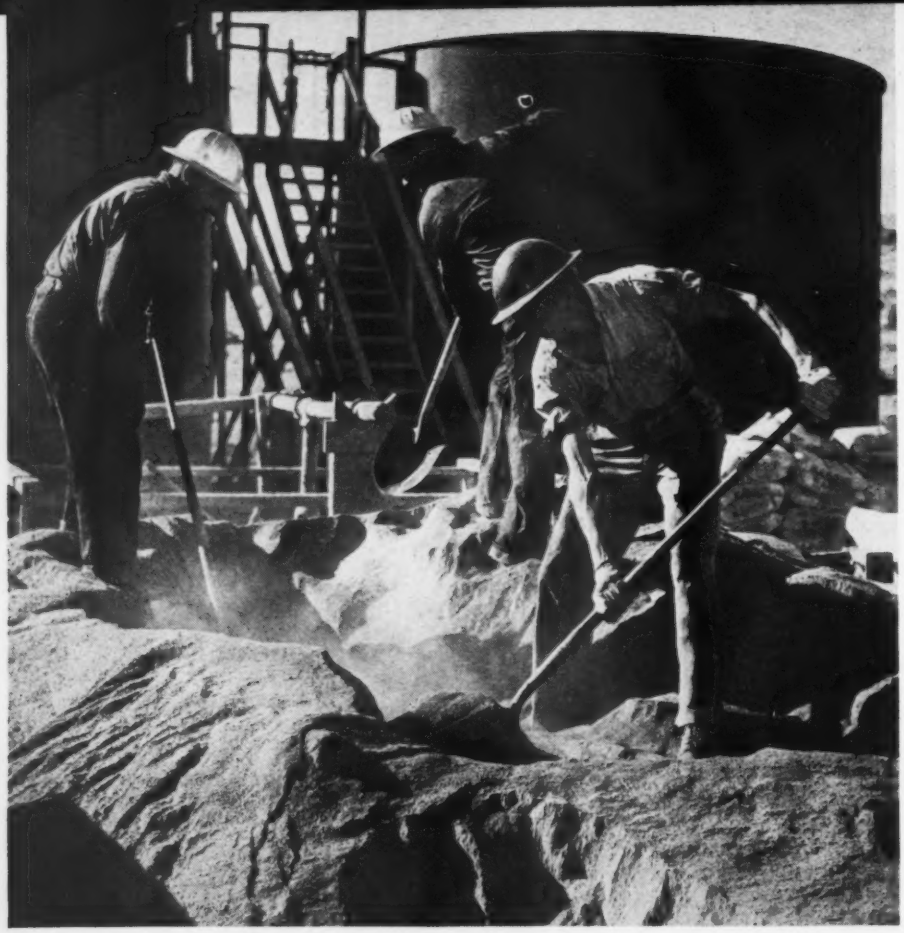
We asked this question: "If you could sit down with an executive of your company, over a cup of coffee, and could ask him anything you wanted to know, what would you ask?"

As you can see by the tabulation of replies, the princial interests, the main questions, lie in the field of company plans for the future, company products, new developments and changes to come.

Despite the opportunity to ask about wages and matters of strictly personal interest, our employees inquired about research, new products and company expansion.

An equally important question is: "What does management want the employee to know?"

Let's pause for a look at our country. We have the highest standard of living in the world and freedom of the individual that is practically unknown in any other country. And yet, in spite of our experience in America, we have seen much of the world go along in other directions. We must be pretty poor salesmen if we can't sell our way of living. So when we talk about what our employees should know



• Although Standard men at work here drilling mud are far from the home office, they're kept interested and informed of company activities by news letters and bulletins sent them.

and what we should like to have them know, we ought to include something about free enterprise. So far we have not told the story very well.

There is the union side of the story, which is only *one* side. Therefore, it is management's duty to present both sides, in their true relationship.

A recent example of the company telling its story to its employees is that of the Southern California Gas Company which declined to sign a contract unless the representatives of its employees complied with the anti-communist requirement. A letter was sent immediately to all the employees explaining the position of the company; it was a factual and fair message.

In addition to direct mail, a variety of methods may be used to put such information effectively before the workers. We asked: "Which one of these ways of getting information about your company would you personally get the most out of?" The results were:

62	per cent	—company paper
20	"	—meetings
20	"	—training courses
18	"	—bulletin boards
11	"	—handbooks
8	"	—letters
0	"	—"All the same."
1	"	—"Don't know."

To qualify this tabulation, we should explain that we do not have many meetings; consequently, our employees are not in a position to know just how effective properly conducted meetings can be. We have some training courses, but we have not used this means to distribute information about the company and its operations.

Returns on Bulletin Boards

The returns on "bulletin boards" and "handbooks" surprised us. We believe they are a great deal more important than the employees rated them and that much improvement can be made with the use of bulletin boards. This medium may be the poorest handled means we have of reaching the worker. But if thought is given to what the employee really wants and that information is posted, the worker can and will use it.

In other companies, similar employee surveys have shown that the workers (55 per cent of them) prefer meetings to all other media of giving them first-hand information. In several companies that regularly use letters to reach their employees, the preference has reached as high as 26 to 37 per cent. In contrast, our company has sent out only a few letters, which explains the eight per cent response of our employees regarding this medium.

The high percentage group that said they liked the company letter also added that they preferred the company paper (38 per cent). Our conclusion is that the company paper, the house organ, is one of the best company media we can use if properly handled.

House Organs

Most company house organs are filled with too much trivia and social chatter, which have no general or universal appeal to other employees. This material seems to center around specific names and the writer, important only to the few. But the company house organ should also be used for the telling of the company's story truthfully, factually. And it should carry a personal message from the management.

Such a publication, according to surveys, is very well read. It is a fine medium for putting across management's message and the employees say they prefer it. In one company which pounds away all the time on the company's story from the president and other members of top-management, it was found that 91 per cent of the employees said that they could believe the magazine. *That comes from telling the story straightforwardly, truthfully, factually,* and in a manner and style that employees will like. It pays out in more ways than one.

Other media which may be developed are annual reports, plant visits, motion pictures, sound-slide films and the management letter. All have big possibilities.

Our company sends out a Management News Letter every month to all members of management, with their complete approval and acceptance, including the first line foremen and assistant foremen. We tell the story of company plans, programs, operations, what lies ahead, what the labor relations picture is, and any information about operations that we think will be of interest to management people.

The only criticism we have received is that it "isn't big enough"—it doesn't tell enough. The readers want more of the same thing — more about our foreign operations, new developments, experiments, research.

Just the fact that they are getting good, hot "off the platter" news about the company's plans helps a whole lot in causing management to feel that they are part of the playing team. And what is more, it supplies them with information which they can pass on down to their people.

Pertinent information about management demands and merits the attention of the top men in the company.

Too often the man who gets out the material for the house organ is a little fellow in a back office with limited authority. He is expected to do his best "under the circumstances"; he must make the publication highly interesting to employees; and he is supposed to present a message

from management. But can he do this job without the interest of top-management?

In our company, employees look at all material they receive with the question, "How does this affect me?"

That is a perfectly natural and logical question. Their interest in plant operation is from the angle of job security — how is it going to affect them? They are interested in themselves.

For example, a recent issue of our house organ was devoted to the advertising department. The survey showed it had a 24 per cent readership. But buried far in the back of the same issue was an article about a Seattle service station entitled "Forty Years Later and 400 Times Larger." It had a 74 per cent readership by the employees at the Richmond refinery.

Our advertising department story was a straight-performance article — So-and-so handles the color work — John handles the poster board — Billy runs the errands — 22,976 pieces of paper are handled monthly—so many workers are in the department, etc. But there was nothing in this story that would affect the boys in the Richmond refinery.

On the other hand, the story about the service station in Seattle said something like this: "During the war we were not able to build a lot of service stations; in fact, we could not build any of them. Now we want to catch up with this lost business. This is the first of the new super-service stations we are going to build on the West Coast. We want to expand our markets and we want to give more outlet for our products. We want to give better service and this is the way we are going to try to do it."

That did affect the people in the Richmond refinery. It showed a continued need for the company's products. It told the story from the employees' viewpoint which is, "How do these changes affect us and our work?"

Results of Survey

Our survey and checking have resulted in the following summation:

(1) We approve all these media, but they merit the attention of the top men in the company. *Management* should tell management's story. Top - management should help the house organ editor, and the editor, in turn, should have access to all the information that it is permissible to print.

(2) Our stories to employees should be told from the viewpoint of *"How does this affect me?"* That is where the interest lies.

(3) The best time to tell the management story is now — when no subject of controversy is in existence. Information presented to employees when issues are not "hot" will build up a background.

(4) Be factual, fair and straight from the shoulder. Be sure that confidence is not misplaced. Tell the whole story.

(5) A final important point is "don't overlook the wife." She is a pretty stable influence. Get some of the information across to her in the home by sending her the house organ direct; it pays dividends. Invite the wives to visit the plant and see where the husband works. There is a kind of pride in making such a visit, a pride on both sides that it pays to recognize.

We must not overlook the day-to-day contacts with management. In the actual work, little else will take the place of the foreman and supervisor in talking and explaining orders and instructions. Also the foreman should give facts about the company and furnish workers the information they would like to know. Workers should be encouraged to talk with their supervisors and ask questions about the company. A two-way exchange is a healthy medium for understanding.

WHAT STANDARD OIL EMPLOYEES WANTED TO KNOW

60 per cent said they would ask about company plans for the future, for expansion, for new products, for other changes, *and how will this affect me?*

58 per cent said they would ask what the company is doing for the benefit of employees, the pension program, health and accident benefits, life insurance, hospitalization.

37 per cent said they would ask what the company is doing to improve the products, manufacturing methods and developing research.

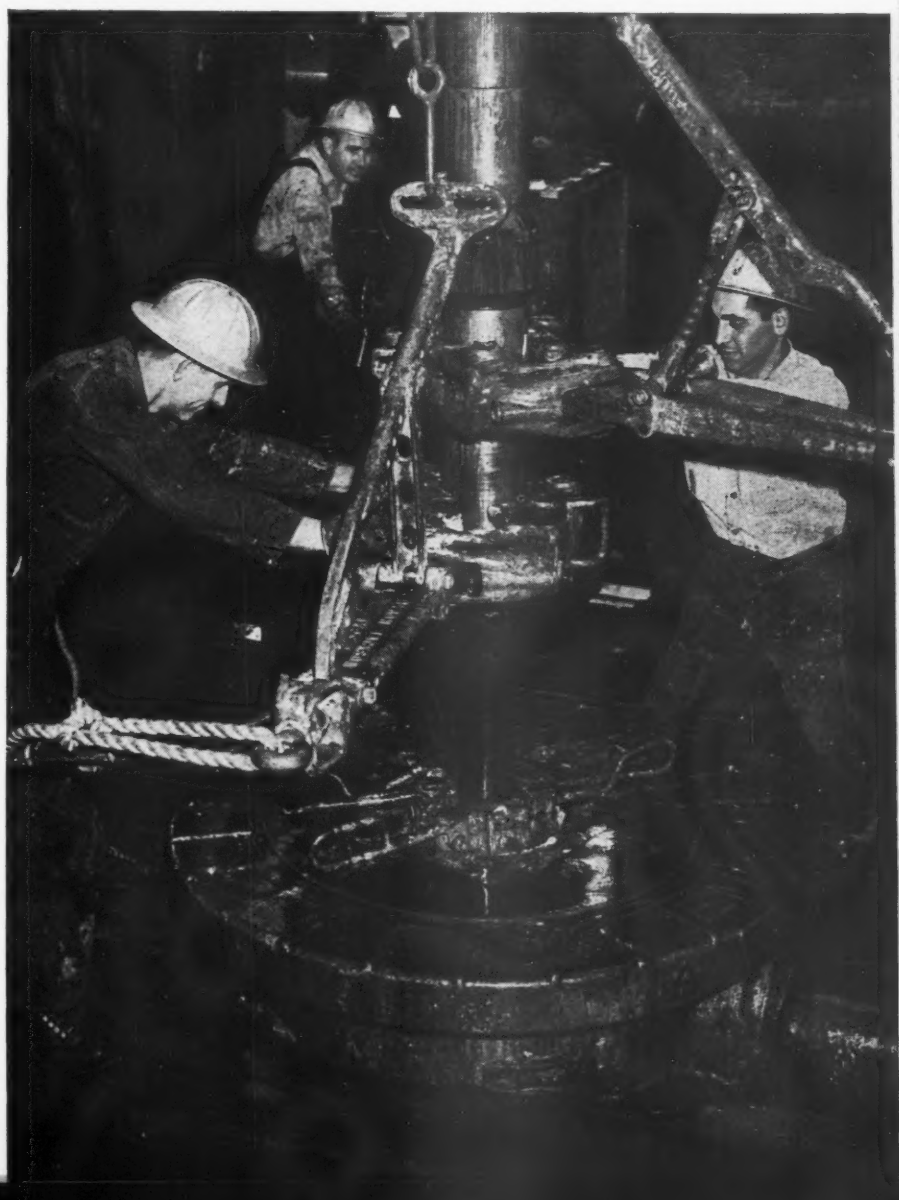
33 per cent said they would like to know who the men are who run the company; what are they like as people; what did they do to get where they are?

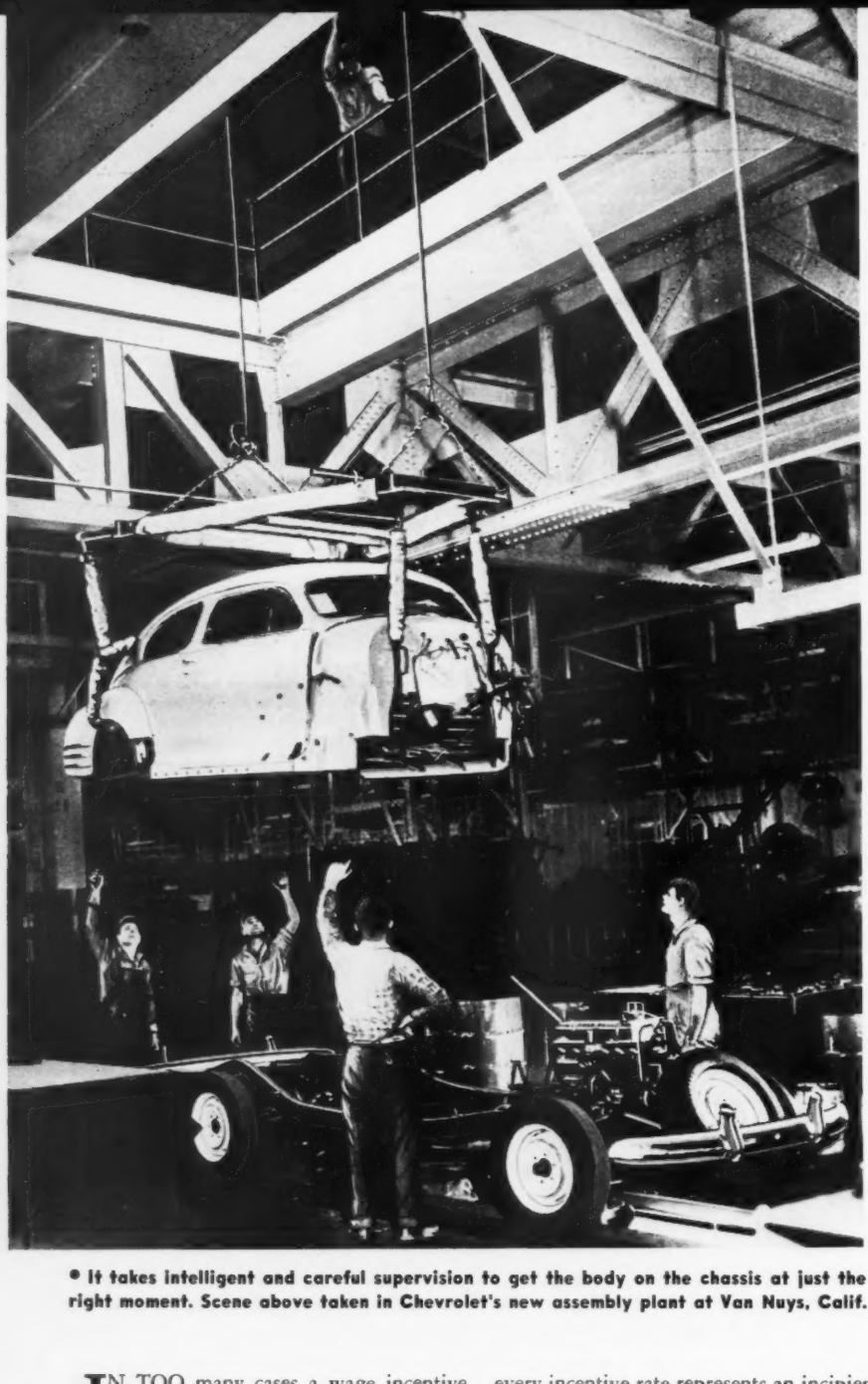
31 per cent would ask what the company stands for; what are its principles and policies; what does it aim to do for employees, customers and stockholders?

And finally, on down the list, we run across the least-liked questions (and some delicate ones). For example, 19 per cent would ask who really runs the company, who actually owns the stock, who are the stockholders?

13 per cent would like to know what happens to the money the company takes in! How do I rate with the stockholders?

• Through monthly management letters both union and company views on various problems are presented to these employees shown here connecting drill pipe in the Kettleman fields.





Foreman is the Key for Incentives

By DON SAURENMAN
Industrial Consultant, Whittier, California

• It takes intelligent and careful supervision to get the body on the chassis at just the right moment. Scene above taken in Chevrolet's new assembly plant at Van Nuys, Calif.

IN TOO many cases a wage incentive is installed in an organization in lieu of adequately trained and informed supervision. Actually, the success of a wage incentive program depends on better supervision.

The foreman, as manager of his department, must accept full and direct responsibility for the success of any program in his department. This means the foreman must be adequately trained; understand the principles and procedures involved in the establishing of job rates, and the establishing of methods and standards for the wage incentive; believe in the system, and every incentive rate represents an incipient disagreement between the supervisor and his men.

The purpose of a wage incentive system is to offer a financial incentive to a worker or group of workers to produce work of an acceptable quality over and above a specified quantity. The success of the plan depends primarily upon the fairness and accuracy with which the standards are set, and whether or not they are guaranteed against unsupportable and unjustified changes.

Any basis other than careful measurement by time study or its equivalent is suitable only for the establishment of goals, not standards. The history of wage incentives shows that it is this very basis that led to practices and conditions which placed sound wage incentives in a bad light, and led to their failure and discredit. Every worker must know that his task requirements are comparable within reasonable limits to those of every other worker.

A properly established and administered wage incentive will aid greatly in solving a supervisor's problem of how to get all the time of his men occupied productively, continuously and efficiently. It challenges the management to manage.

The history of the relationship between wage incentives and sound employee relations is not one of which to be proud; however, a sound relationship can and must exist in a successful wage incentive. Assuming management has adequately trained supervisors, with the proper attitude, it would seem a fundamental requirement that before any work is done on a wage incentive, the workers be fully informed of what is to be done, how it is to be done, and the goals sought. Results should be fully discussed with them and progress be made only as fast as the workers can absorb and understand it.

The foreman must understand the principles and procedures and take a major responsibility in the installation and maintenance of the program. If the foreman is not sold, and does not understand what it is all about, his men will realize this fact, and will be against it also.

Foreman Is Manager

Sound management thinking recognizes the foreman as the manager of his department, and nothing can wreck the morale of a department quicker than ignoring its supervisor, or forcing something unknown upon him. When the foreman does not fully understand and approve the program, there are sure to be conflicts between the foreman and the methods and time study analysts. Such conflicts cause the employees to believe that "the engineers are coming in to tell the foreman how to run his department."

A workman naturally looks to his foreman for guidance — the foreman is the company in the workman's eyes. If the workman knows that the foreman believes in the program, understands it, and is guiding and approving every step of it, then he too will do his part to make the program a success. A major factor in the success of the program is dependent on this relationship of confidence and understanding, and no program should be started until it is present.

Engineering Necessary

Management must recognize the necessary competency and caliber of men required to develop and install such a program. If management is not willing to set up the necessary industrial engineering function properly, and staff it with competent people, then management is not ready for the program.

There is a natural desire of management to get the job done at as low a first cost and as quickly as possible; this, accompanied by a lack of knowledge of what is involved, has been a major cause of failure. In successful wage incentive programs, management has recognized the importance of this function, and has staffed it with competent people.

To recognize that the program is more than just taking time studies and installing a wage incentive is imperative. Too often the method is to set standards on jobs as they are found, and then hope the standards will be attained by offering a financial incentive, thus increasing production and reducing costs. This approach has resulted in the "speed-up" and its resultant discontent and opposition to incentives. In such cases no organized effort was made to eliminate waste, or to standardize methods of performing work and training workers in those methods.

Wage incentive standards should be based on proper layouts, standardized equipment or work places, methods, and properly instructed and trained employees. Standards should be set on work that is properly organized; if these conditions are allowed to deteriorate, the program will result in failure. The importance of the assumption of responsibility by the foreman for the program cannot be too greatly stressed. He must understand and insist on the maintenance of the layout, methods, equipment, and conditions on which the standards are based.

The evil of rate cutting has resulted from a failure to guarantee standards once established against change, unless there is a change in method, equipment, or specification. A definite and fixed policy must be established as to the conditions under which a standard may be changed, otherwise the workers will put ceilings on their output in self-protection. The practice of making a minor change in method, and then materially changing the standard is not acceptable.

High Wage—Low Cost

Most foremen and plant managers want to operate a high-wage, low-cost plant. One of the most important factors required in attaining this condition is waste effort elimination. All work performed should be thoroughly analyzed and reduced to its simplest terms, and thus obtain maximum utilization of the effort purchased from and expended by the workers. Effort of workers should be gainfully directed; thus the worker has the knowledge and the satisfaction that he is doing effective work, and one of the principal ingredients of a low-cost, high-pay plant is at hand.

Too often the flow of materials, job conditions, or maintenance of equipment has deteriorated to a point where it is impossible to accomplish an honest day's work. The foreman often complains of not having time to do the job right. Top management should see that he does have time, for it is far more expensive to do things wrong than to do them right. At this point Lillian Gilbreth should be quoted, "There is too much work being studied that should be eliminated."

Low Morale—Increased Cost

No standard should be set for wage incentive purposes until the work has been subject to methods improvement techniques, and the results of the study placed into effect in a satisfactory manner. Overall, the American worker wants to perform an honest day's work; however the job conditions under which he often finds himself makes it impossible to work effectively, thus resulting in lowered morale and increased costs.

JOB EVALUATION FACTORS

Two of the classifications set up by the California Manufacturers Association, with point ratings for each degree.

UNAVOIDABLE HAZARDS

Weight—5 per cent

This factor appraises the accident or health hazards that exist though recognized safety devices and procedures may have been installed. In rating this factor, consider the degree of exposure to health or occupational hazards, or the type and extent of the injuries an employee is most likely to receive.

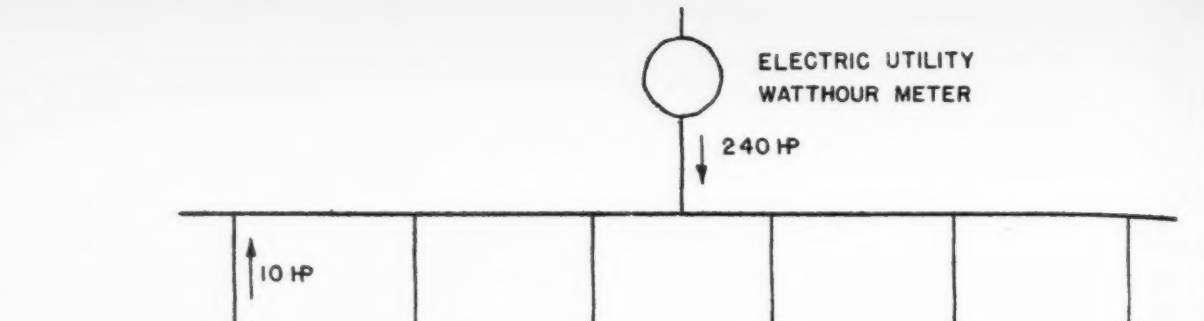
Degree	*Points*
1. No health or accident hazards exist.	0
2. If injured, employee is likely to receive only minor cuts or bruises. No health hazards exist.	13
3. If injured, employee is likely to receive lost-time injury, such as loss of fingers, serious burns, or hernia. Some exposure to minor health hazards exists.	26
4. If injured, employee is likely to receive a serious injury, such as loss of leg or arm. Some exposure to more serious health hazards including occupational diseases.	39
5. Injury may result in complete incapacitation or death. Exposure to extremely serious health and occupational disease hazards.	52

WORKING CONDITIONS

Weight—9 per cent

This factor appraises the physical surroundings in which the job must be performed. Consider, in rating this factor, the extent of heat, cold, wet, dampness, darkness, glaring light, dust, fumes, noise, and the like.

Degree	*Points*
1. Pleasant working conditions.	0
2. No disagreeable elements present other than some noise, inadequate lighting, heating, etc.	18
3. Slight. Some dirt or grease, or only infrequent exposure to disagreeable conditions.	36
4. Moderate. Smoky, or dusty, very dirty or greasy. Exposure to other disagreeable elements, not continuously present.	54
5. Considerable. Continuous exposure to several disagreeable elements or intense exposure to one, such as fumes, heat, noise, smoke, steam, at frequent intervals.	72
6. Extreme. Intensive exposure to two or more disagreeable elements.	90



• Example of supplementary mechanical drive-overdrive shows how 20 per cent curtailment can be offset. Prime mover adjusted to deliver 60 hp. to pump No. 1 supplies 50 hp. there. The balance flows into the system, partially supplying the other motors. Result, plant can operate continuously at 100 per cent capacity within emergency regulations.

Supplementary Power Sources For Drought Emergency

By CHARLES F. DALZIEL
Associate Professor of Electrical Engineering
University of California, Berkeley

THOSE considering large financial commitments and extensive system alterations for supplementary power sources because of the current power shortage should carefully weigh the advantages and limitations of various stop-gap measures. Techniques are offered in this article to provide maximum aid without incurring excessively high initial costs, expensive installations or major modifications in present plant.

An all-inclusive treatment of every possible power source is impossible in view of the demand for an immediate practical solution. Therefore salient points regarding practical emergency power sources and methods of operation may indicate a preferred solution for any given case.

Attention is particularly directed to the induction generator because of the following major advantages: (1) availability of induction machines, (2) low maintenance because of their rugged and foolproof construction, (3) inherent stability and lack of hunting, (4) few changes, if any, required in the rest of the installation, (5) after the emergency, potentialities for a vast multitude of applications in industry, and (6) any mechanically-minded person should be able to master the operating techniques in a very short time.

Mechanical Drive

Although possibly a permanent solution, replacing the electric motor with a mechanical prime mover (internal combustion engine, gas, gasoline or diesel engine; steam turbine, reciprocating steam engine, etc.) may involve prohibitive costs and untenable time delays.

Besides initial cost, cost of installation, continual supervision and maintenance, the threatening shortage of crude oils and the increasing price of petroleum products may result in high cost per kilowatt hour for small installations. From an operating point of view, the most serious disadvantages of the mechanical prime mover are: (1) it is limited to installations having a main drive shaft and (2) it must have a rating at least equal to the motor replaced.

A more satisfactory temporary solution would appear to couple the mechanical prime mover to the load with a clutch or a removable belt drive, leaving it uncoupled the major part of the time and letting the electric motor drive the load up to the limit of its power allotment. Then

Editor's Note: Although power curtailments in northern California were lifted until June 1 just as this issue of *Western Industry* went to press, this article is being published nevertheless in view of the possibility of re-imposition of controls later, and also because limitations have not been lifted on applications for new business.

the motor would be disconnected and run idle.

An advantage of this method is the flexibility in selecting convenient operating schedules, such as operating the mechanical prime mover at times when attendants are available. The convenience of such a dual drive should offset the small windage and friction losses of the induction motor running idle.

Installation of a supplementary mechanical drive, such as a pulley, on main drive shafts, should present only a minor problem. However, the thrust of the belt is important where large capacities are involved.

Induction Generator

The basic principle of the induction generator is easily understood when one considers that the energy flow in induction machines is a reversible process. An induction motor energized from a power source develops mechanical power by running at a speed slightly less than its no-load speed. Conversely, an induction motor driven in the same direction at a speed slightly greater than its no-load speed will deliver electrical power when connected to a power system.

As a generator, approximately full-load will be delivered at a speed as far above the no-load speed (synchronous speed, 1800, 1200, 900 rpm., etc.) as the full-load speed stamped on the name plate of the machine (1725, 1150, 865 rpm., etc.) is below the no-load speed.

Induction motors are the cheapest, most rugged and fool-proof of all types of prime movers. The availability of squirrel cage or wound rotor induction motors, together with the fact that the control equipment for use as an induction motor will serve equally well for operation as an induction generator, are paramount in this period of power shortage.

Fortunately, either type of motor will serve equally well as an induction generator, but the squirrel cage is more efficient and costs less. For safe operation the only additional auxiliary electrical equipment required is an ammeter, and possibly a wattmeter, together with devices to protect the instruments from starting currents. Knowledge of the current supplied by the motor is required to permit proper adjustment of the throttle of the prime mover so as to keep within the rated capacity of the machine and avoid dangerous overheating.

Suppose, for example, a certain plant has a continuous load of 75 horsepower and the curtailment is 20 per cent. A 15-hp. three-phase induction motor (preferably a size larger to allow a margin of safety) driven by a suitable prime mover, such as a tractor or automobile engine, could supply the required curtailment and thus permit the plant to operate continuously at full-load within rationing regulations. It is merely necessary to set the throttle of the prime mover so that the induction machine operates *above* its no-load speed and delivers the full-load current given on the nameplate of the machine.

A thermometer should be attached to the stator steel to make sure that the machine does not overheat. (Use oil putty.) The maximum allowable operating temperature is based on an ambient air temperature of 40°C. plus the allowable temperature rise given on the nameplate. Obviously the temperature of the stator steel will be less than that of the hot spot inside the windings; however, the difference should not exceed about 10°C. during continuous operation. Hence, for 40°C. motors, the maximum operating temperature should not exceed 70° to 80°C., or 158°F. to 176°F.; for 50°C. motors the values are 80°C. to 90°C. or 176°F. to 194°F., respectively.

The curves of the accompanying charts were obtained on two 15 hp. three-phase 220-volt wound rotor induction motors in recent tests in the electrical machinery laboratories at the University of California, Berkeley, with the terminal voltages held constant at 220 volts. They illustrate the significant electrical characteristics of the machines for both induction motor and induction generator operation. Significant results obtained from the curves, and from two additional machines are given in the accompanying table.

The circle diagram for an induction machine indicates that for the same stator current, the rotor currents during generator operation should be greater than during motor operation. Although the experimental results are in agreement with the circle diagram for stator currents at light loads, it was found that the rotor currents were equal for the same stator current for values of stator current near and slightly above rated. From this it is apparent that the copper losses in the machine (either wound rotor or squirrel cage type) should not exceed the values at full load for either motor or generator operation for stator currents up to and including full-load current.

For a given voltage, the core loss will be slightly greater for generator operation. However, the resulting slightly increased heat when operated as a generator should be offset by better heat transfer due to increased windage produced by the greater speed of the machine. Hence the load on the machine should be limited to the full-load nameplate stator current, and *not* kilowatts or horsepower.

The efficiency and capacity of an induction machine is slightly greater when operated as an induction generator, although the precise relations between full-load current and horsepower output as a generator cannot be ascertained without having machine design data. However, the delivered output in kilowatts as a generator corresponding to a given stator current may be taken directly from the curves. The delivered horsepower output for the four machines, corresponding to full-load current, is given in the table, which shows that each machine delivered an output greater than its nameplate horsepower rating, or shaft output as an induction motor. It is concluded that, consequently, squirrel cage and wound rotor induction motors should safely deliver a power output equal to, or slightly in excess of their nameplate

ROUGH ESTIMATING FUEL RATES OF DIESEL, GAS AND GASOLINE ENGINE DRIVEN ELECTRIC POWER PLANTS

The following data, representative of small and medium sized units, are compiled from the operating conditions of a large number of units. Figures from Knowlton's Electrical Engineering Handbook and from Edison Electric Institute Publications.

1. DIESEL ELECTRIC SETS — MEDIUM AND SMALL:

Overall unit efficiency is about 10.5 kilowatt-hours delivered at the generator terminals per gallon of diesel fuel consumed by the engine. Using 7.3 pound per gallon, 30° Baume diesel oil the above also equals 1.44 kilowatt-hours per pound of oil. These figures are based on an average of 119 plants. Omitting the generator, the engine alone uses .063 gallon fuel per brake horsepower hour at the engine crankshaft.

Test data on small high speed diesel driven generating unit

% Load	Lb. Oil/Brake HP Hr.	Kw-hr. delivered per gallon
100	0.45	13.0
75	0.48	12.2
50	0.54	10.8
25	0.81	7.2
15	1.15	5.1

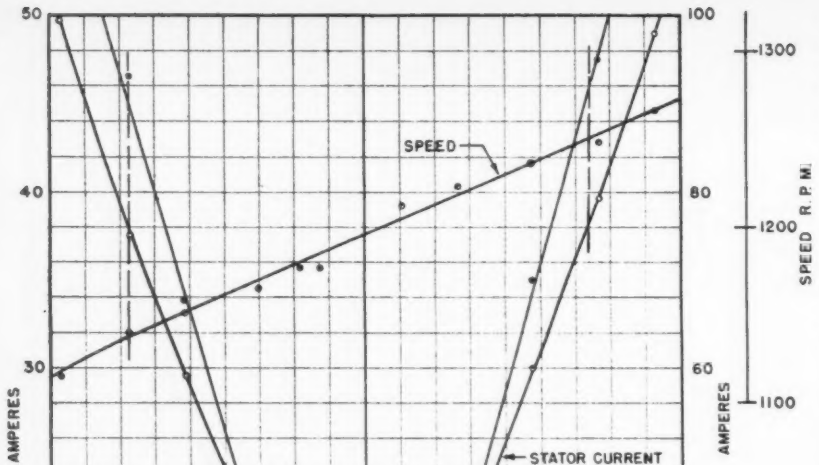
2. GAS ENGINES — MEDIUM AND SMALL:

Test data on gas engine driven generating unit using natural gas fuel

% Load	Btu./Kw-hr.	Cu.ft. of 1070 Btu. gas per kw-hr.
25	37,000	34.6
50	26,500	24.8
75	20,000	18.7
100	18,500	17.3

3. GASOLINE ENGINES — APPROX. 100 HP.

Lb. Fuel per Brake HP Hr.	Gal. Fuel per Brake Hp Hr.	Gal. Fuel to Engine per kw-hr. from Generator
.55	.089	.133



• Significant electrical characteristics of wound rotor induction motor for both induction motor and induction generator operation shown by the curves on these two pages. This charge shows 15 hp. 3-phase 220 v. 38 a. 1200 rpm. no-load. Curves obtained in recent electric machinery laboratory tests at University of California, Berkeley.

rating when operated at rated voltage and full-load current as induction generators. Many improvised supplementary drives are being installed for duration of the emergency. Installation of a pulley on exposed drive shafts should be inexpensive.

Although the induction motor is an inherently stable machine, it may be difficult to hold the load constant over long periods of time, especially when using reconverted prime movers equipped with makeshift governing apparatus. However, induction generators should give a minimum of trouble because of their inherent stability and lack of tendency to hunt.

The speed-output curves show that the induction generator has a rising-speed-load characteristic; i.e., an increase in power output requires an increase in speed. In contrast, most mechanical prime movers have a drooping speed-load characteristic; i.e., they slow down as the load is increased. Since operation occurs at the intersection of the two speed-load curves, it is apparent that conditions are inherently favorable for a high degree of stability.

A machine operated in this manner will deliver kilowatts to the power system, while the power system supplies voltage regulation, frequency and the excitation required to produce the rotating field in the induction machine. Thus the induction machine is impotent unless connected to a power system, a decided advantage for temporary installations, as it provides an automtaic safety feature. Except for very rapidly decaying transients, the induction generator can supply no current to a short circuit, and thus there is no danger of a back feed during short circuits on the utility system or during emergency switching operations.

During the operation of the induction generator, the power factor at the electric utility meter is lowered. Where billing is made on a power factor basis, the possibility of power factor penalties should not be overlooked. Of course, the increased reactive kilovoltamperes may be compensated by any of the means ordinarily used to correct power factor, such as capacitators, over-excited synchronous machine motors, etc. It should be appreciated that where these means are used, dangerous overvoltages may be produced during switching operations due to self-excitation.

All that is required in placing the induction generator in service is to drive it at a speed somewhere between full-load speed as an induction motor and full-load speed as an induction generator, and then connect it to the power system. The throttle of the prime mover is then adjusted so that the machine operates *above* its no-load speed and supplies full-load current. From this point on, the problem is one of maintaining a constant output by occasional readjustments of the throttle, so that the machine delivers to the power system a load consistent with safe operating temperatures. The kilowatt output actually delivered to the power system may be determined from an indicating wattmeter, or computed from observations made on the utility kilowatt-hour meter.

Supplementary Mechanical Drive-Underdrive

To illustrate the use of a supplementary prime mover to underdrive a load, consider a vertical pump installation. Assume that the pump is normally power driven with 100 hp. electric motor. The engine coupled to the pump could supply the required 20 per cent curtailment under the emergency regulations of the California Public Utilities Commission or 20 hp., leaving for the induction motor a remainder of 80 hp.

The chief advantage is that the prime mover need not match the load. Any small amount of added power can be utilized, and therefore any prime mover can assist in relieving the power shortage. However, the practical requirement is that the prime mover have a capacity sufficient to generate the required curtailment. With the exception of series motors, this method can be used effectively with any type of alternating current motor, single phase, three-phase, induction, or synchronous.

Supplementary Mechanical Drive-Overdrive

In overdriven cases also the prime mover need not match the load. The method is particularly applicable where several electric motors are involved. In practice, it would be advisable to supply slightly more than the exact curtailment to allow for variations in prime mover output, and the losses in the induction generator and in the electrical connections to the various motors. The latter case may be of concern in installations supplied from various meters located at considerable distances from the induction generator.

Synchronous Generators

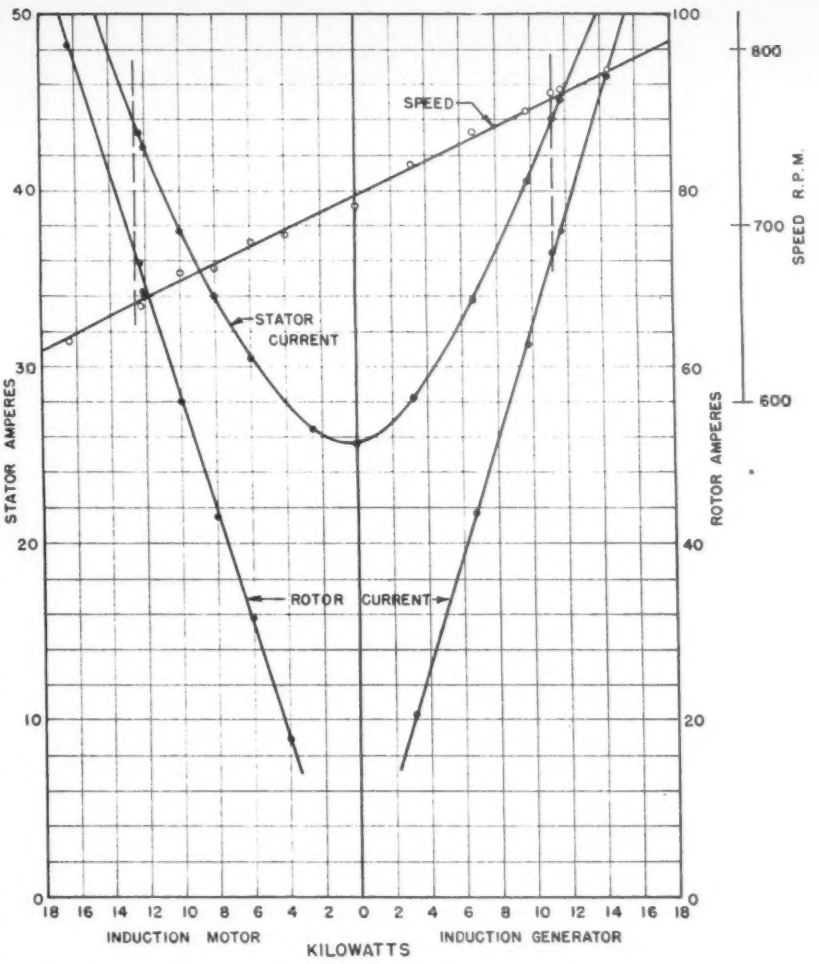
Because of the anticipated temporary nature of the present emergency, the future value for industrial use should be con-

sidered of internal combustion engine alternator units and synchronous motors, the latter being operated as generators. While either machine may be used as a generator, the converse may not be true. Many alternators cannot be used satisfactorily as synchronous motors. Due to slight differences in the pole face windings, the starting winding of a synchronous motor may serve fairly well as a damping winding when the machine is driven as a generator, but the damping windings of some alternators may not develop sufficient torque to bring the machine up to speed when used as a motor.

Future need for small synchronous generators would appear negligible in comparison to the potential demand for synchronous motors. The writer is of the opinion that an 0.80 power factor synchronous motor should operate satisfactorily as a synchronous generator when operated in parallel with a power system, and should be useful for a wide variety of purposes after the present emergency has passed.

The chief advantages of the synchronous generator are that it can supply both kilowatts and reactive kilovoltamperes. When over-excited the power factor at the electric utility meter is raised, and in cases where billing is made on a power factor basis, a bonus for high power factor should be an important consideration.

Its most serious disadvantages are: (1) high first cost, (2) complexity of control apparatus, protection equipment and instruments, (3) necessity of generating both alternating and direct current, (4) high maintenance costs, and (5) cost of skilled attendants. These disadvantages assume lesser importance as the size of the installation is increased.



• Inherent stability of induction generator is apparent: it has a rising speed-load characteristic, i.e., an increase in power output requires an increase in speed. Significant results obtained from the curves and from three additional machines are shown on table below. This chart shows a 15 hp. 3-phase 220 v. 44 a. 720 rpm. no-load.

Methods of Operation

In contrast to the induction generator, which must be connected to a power system, the synchronous generator may be operated in synchronism with the power system, or as an isolated plant. In certain cases it may be desirable to divide the load so that part is supplied by the utility, and the remainder carried by the synchronous generator operating as an isolated system. Except for supplying lighting loads, small units had best be operated in synchronism with a power system. However, large units equipped with modern governors and voltage regulators may be used to supply their own loads, similar to marine installations or remote utility systems.

When operating as an isolated system, heating and centrifugal loads should be the simplest to serve. Lighting and timing devices inherently possess more exacting requirements. Large motor loads may cause objectionable voltage and frequency variations and instability when starting large motor loads. Starting large constant torque loads, such as rock crushers, rolls, mills, compressors without unloading valves, etc., impose the heaviest burdens likely to be encountered.

In contrast to the induction generator, the speed-load curve of the synchronous generator at constant frequency is a straight line. Consequently, the control of output when operated in synchronism with a large power system is more difficult. Synchronous machines are very sensitive to system disturbances, and voltage disturbances originating at distant points on the utility system may produce violent transients in both current and voltage, which may result in out-of-step operation.

These complications are such that it is highly probable that operation of synchronous generators in synchronism with a power system is beyond the ability of those not especially trained in power plant operation. Installations designed for isolated plant operation should not be operated in synchronism with a large power system prior to a thorough investigation of the short circuit interrupting duty imposed on the circuit breakers.

OPERATING CHARACTERISTICS OF 3-PHASE WOUND ROTOR INDUCTION MOTORS

Nameplate Data Induction Motor			Experimental Values							
			Induction Motor				Induction Generator			
HP	Speed	Amps.	Amps.	Input KW	% Slip	% Speed	Amps.	Output HP	% Slip	% Speed
15	720	44.0	44.0	12.6	8.9	91.1	44.0	15.1	7.2	107.2
15	1200	38.0	38.0	13.5	5.2	94.8	38.0	17.1	4.2	104.2
15	1200	38.0	38.0	11.4*	3.9	96.1	38.0	12.7	4.2	104.2
5	1200	?	25.0	3.9**	4.8	95.2	25.0	4.3	3.3	103.3

*Motor failed to develop nameplate output of 15 HP. Estimated shaft output 12.5 HP at 220 volts, 38.0 amperes and 1150 RPM.

**Results from 5 HP, 110 volt induction motor at 3.16 HP output.

Pre-Packed Tomatoes Handled Mechanically

Wherever materials are to be handled, there some business organization is either making or losing money, perhaps an amount large enough to mean the difference between profit or loss on the entire operations of the company. For that reason, "Western Industry" provides a continuous editorial service to its readers on materials handling developments and problems. The accompanying article is another of "Western Industry's" regular features on the subject of materials handling.

ONE of the most complete materials handling set-ups for the food packing industries of the West is that of Walter Holm & Co. at Nogales, Arizona, right on the Mexican line. Here fancy grade tomatoes are received from Mexico, Texas and California, pre-packed under highly mechanized conditions and then distributed principally within a radius of 1,500 to 2,000 miles, with occasional rail shipments to the Atlantic Seaboard.

Distribution of the product is practically entirely dependent on motor vehicles, which provide a fast delivery service enabling the firm to land the tomatoes at the customers' doors when desired and in the proper condition. Mileages are so great and the operation so continuous that it is necessary for the vehicles to average 140,000 miles a year.

Truck-trailer combination units, owned by the company, do practically all of the hauling. Each transport consists of a tractor and Fruehauf refrigerated van trailer. The usual load is 2,200 to 2,400 10-lb. cartons of an aggregate weight of 11 to 12 tons.

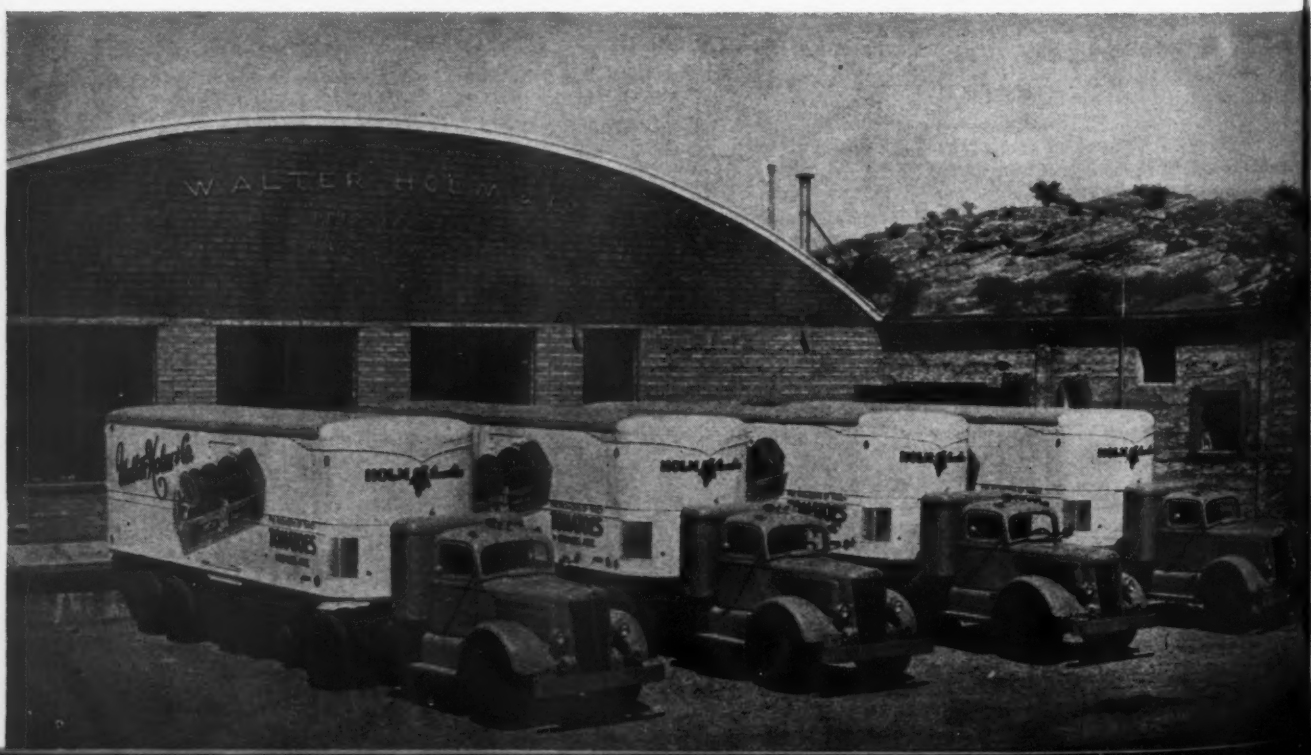
Incoming shipments are mostly by rail, augmented by the company's trailers during the Texas and California seasons. Outgoing shipments are palletized and loaded into the trailers by electric lift trucks.

The main plant of the layout is approximately 90 by 150 sq. ft., and is of concrete block and concrete construction. The room has no uprights and this space is supplemented by an additional 19,000 sq. ft. incorporating storage rooms, unloading space —there is a 14-car spot—and, particularly, eight conditioning rooms, each 18½ by 35 ft. in size, and holding around 60,000 lbs. of loose tomatoes. Thus, the conditioning space afforded by the plant comes pretty close to holding 500,000 pounds.

A typical car, arriving from Sinaloa after from two to five days in transit, arrives at the plant hard-green. It is unloaded by means of special conveyors and the loaded lugs go directly to the stripping line. Here they are unlidded and pass to the stripping belt where the wraps are removed automatically by suction, and the tomatoes given their first grading for color. The wraps, incidentally, are carried off to a disposal room where they are baled daily as waste paper.

Green stock then goes back into the conditioning rooms for conditioning where they remain until fully pink, or from three to seven days. The pinks diverted from the

• Quick and efficient delivery of tomatoes from Nogales, Arizona, is dependent on motor vehicles travelling a radius of 2,000 miles. The truck-trailer combinations shown below, consist of a tractor and refrigerated van trailer. Shipments are palletized.



• Tomatoes from the Walter Holm & Co. plant on the Mexican border, are conditioned and sorted in a "hot room line," which is kept at a temperature of 65 degrees with hot water heated copper tubing in the concrete floor. Humidity remains around 85 degrees.

original selection go on to the sizer and pre-pack line.

The conditioning rooms, installed by the Armstrong Cork Co., have four inches of cork insulation. Chrysler condensing units and special cooling-heating and humidifying equipment were designed and installed by the Bloom System of Detroit, which handled a considerable portion of the entire plant installation.

After conditioning, tomatoes are again brought to the "hot room line," where they are again sorted for color, and this time also for quality. The greens moved back into the conditioning rooms for more maturity, and the pinks go on by conveyor to the pre-pack line. Oversize tomatoes move to a special line for pre-packing while the undersized tomatoes hit the cull line, characterized by an automatic grinder and water disposal unit, or will be diverted to by-product uses.

The tomatoes come out in four sizes: (1) undersize, (2) six by seven size for the four-tomato package, (3) six by six for the three-tomato package, and (4) oversize for repacking in other type containers.

With color, size and general quality accounted for, the problem now becomes one of weight. The company is packing a 14-oz. package, and the object is to hew closely to this weight, allowing just enough overweight for proper tolerance. This is accomplished through a method designed by the Bloom System which is already in use in major pre-pack plants in the east.

Each packer has before her tomatoes of the six by six, or six by seven size. In the latter case she places three tomatoes in the carton on the scale, which shows here the exact weight. Opposite her on the line is another girl who is also being furnished with tomatoes of the same size and is weighing them one by one and placing them into one of 16 channels according to their exact weight in fractions of ounces.

The ends of these channels extend throughout the line with the other end at the reach of the packer, and in this case each channel is numbered with a number to correspond to the weight on the machine.

Thus the packer has only to select the fourth tomato from that channel marked with a number to correspond with the weight shown on the scale. Packing of this fourth tomato brings the weight to just a shade over 14 ozs.

From the packing lines the tomatoes are placed on a submerged belt which carries them to the FA machines. The end product, although it has an appearance familiar to orthodox overwrap tomato packs, probably represents an exactness and control developed in a very few plants up to this time. They represent the latest ideas of their manufacturer, including an electric eye to register printed design, a perforator to eliminate moisture collection in the film, new static eliminators, and ability to handle a different variety of films than earlier machines.

These machines have a capacity of from 65 to 90 packages a minute, and take three different size bolts of film, both as to width and length. Customarily the plant uses both cellophane and acetate.

The consumer units are packed 10 to a master carton in two rows of five each. Stitching, operated on machines designed for this purpose, is carried out right in the plant near the packaging lines.

Both temperature and humidity control, in addition to being a component part of the conditioning rooms, is carried out throughout the main plant so that from the moment tomatoes enter the plant, they are always under the most ideal conditions. Heating of the main plant, designed by the Cyclotherm Corporation of Oswego, N. Y., is provided by an under-floor heating system.

NEW PRODUCTION TECHNIQUES

Save This Loss: Only 20% Arc Time on d-c Welders

By F. H. VARNEY
DV Welding Controls, Oakland, Calif.

SURPRISING as it may sound, facts show that d-c motor-generator welders run idle 50 to 95 per cent of the time. Careful tests run in scores of California fabricating plants show that actual arc time ranges from as little as *24 minutes* out of an eight-hour day, to a maximum of about 3½ hours. The average of all tests is approximately 20 per cent actual arc time, or less than two hours of welding during an eight-hour period.

From the power load standpoint idle-running welding generators are especially bad. Under typical operating conditions, the power consumption rate for idle-running 300-ampere welders is approximately 4 kw., and 6 kw. for 400-ampere machines. Furthermore, idling welders have an extremely low power factor which greatly increases the KVA demand tending to overload power circuits.

A d-c welder running "idle" for only *10 seconds* uses as much electric power as the same welder will use in starting up. Therefore, if the welder can be shut off for more than 10 seconds, power will be saved.

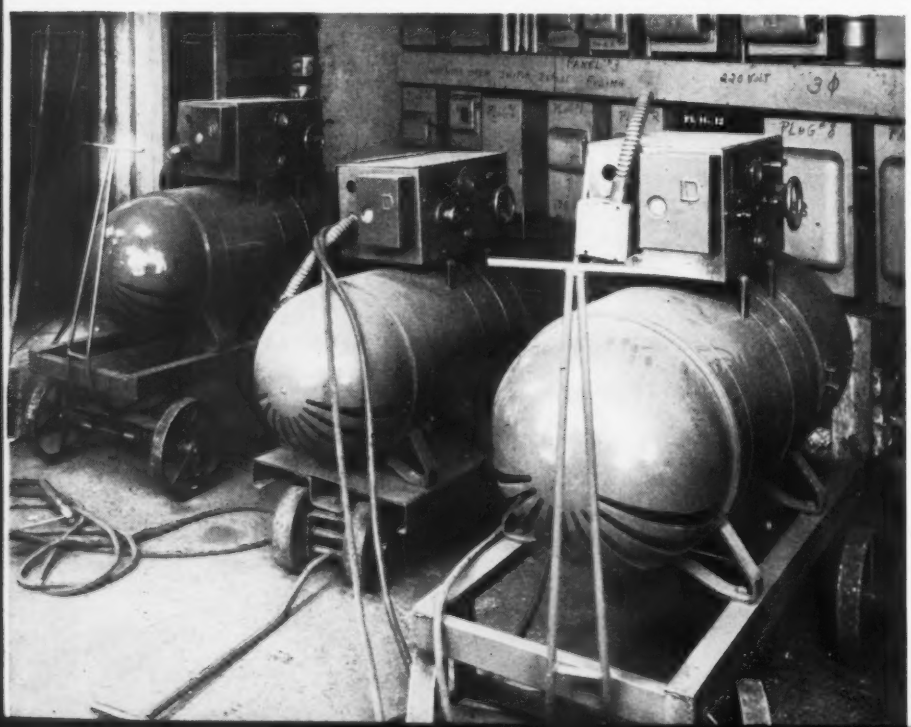
The reason for this departure, in the case of a d-c welding set, from the general rule that an idling motor has to run for five minutes before it uses as much power as it takes to start up is two-fold. First, an "idle-running" welder is driven by a motor that is far from idle. And secondly, the starting-up period for a welder is considerably shorter than for the average industrial motor.

When the motor-generator type welding set is idling, it is only the main generator that is idle. The driving motor may be running 35 per cent loaded. It is driving not only the idle main generator, but also the fully loaded ventilating fan and the fully loaded exciter generator that are built into the welder. The result is that under average conditions of use a 300-ampere welder may use power at the rate of 4 kw. or more while running idle, while a 400-ampere machine may easily draw 6 kw. (cases are on record of careful and accurate measurements showing values as high as 8.5 kw. input to idle-running 400-ampere welders).

Compared to the energy of inertia stored in the flywheel of a punch press while it is running, there is relatively little inertia in the ordinary d-c welder. Thus a welder will come up to speed in about one second, whereas it might require 10 seconds or more for the rotating elements of a punch press to reach full speed when started from a standstill.

By eliminating the idle running time on the average welder power consumption could be reduced approximately 57 per cent. (The amount of the reduction would be proportional to 80 per cent idling time multiplied by one-third of full load input rate. The total amount of power used would be proportional to the above reduction, which represents the power used while idling, plus the power used while welding, which is proportional to 20 per cent welding time multiplied by 100 per cent, assuming that the welder is fully loaded during the time that welding is done. The ratio of the above-defined reduction to the total amount of power used is .57, or 57 per cent.)

• Automatic start-stop controls cut idle running time to a minimum on these d-c welders at San Francisco plant of Gar Wood Industries. Arc time totalizers give production data.



It is neither practical nor possible to eliminate *all* idle-running time. Interruptions for changing electrodes, inspecting welds, scaling slag, etc., are too brief to warrant shutting the welder off. However, it has been determined by carefully conducted tests, using instruments specially designed for the purpose, that most of the unnecessary idle running of d-c welders can be eliminated even though the welder is allowed to run for two minutes after welding has ceased. Such a two-minute period will cover the time required by the operator to perform short tasks like those mentioned above. Thus, if the welder is shut down only after two minutes of idle operation, it will not be subject to frequent stops and starts, but will be shut off only if there is a lengthy interruption in the welding work.

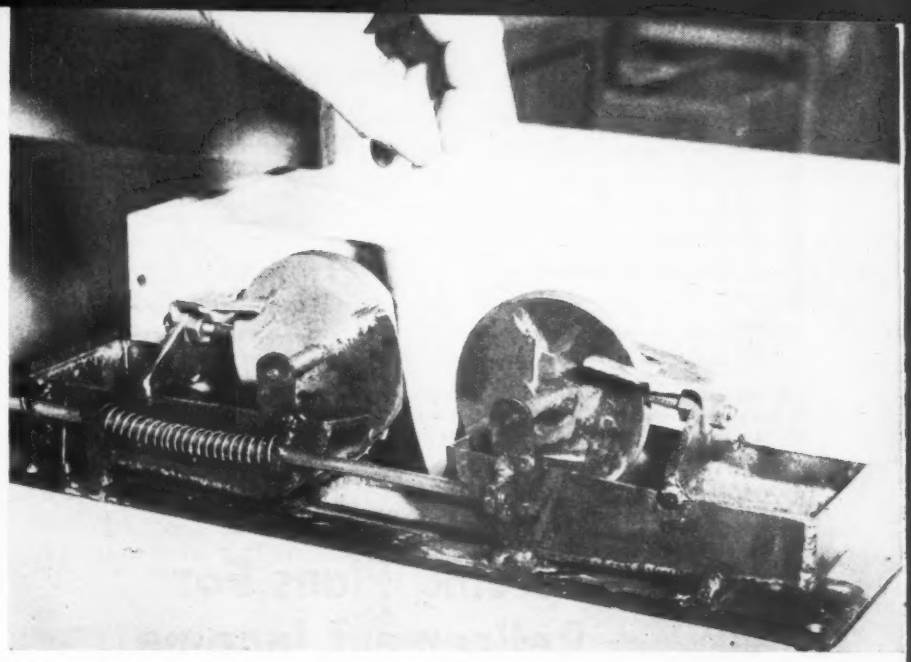
There is an automatic start-stop control commercially available which has been designed to perform this shutting-off job and to permit the operator to start the welder merely by touching his electrode to the workpiece. Besides saving steps, because the operator never has to leave his work to start or stop his welder, the automatic control does all the "thinking" required. Nobody in the shop need remember to do anything different; once the control has been mounted on the welder it can be forgotten.

The reduction in power bills resulting from the action of the automatic start-stop control is frequently enough to equal the cost of the control each year of its use. The saving in maintenance cost resulting from cutting the running time of the welder in half is also considerable. Thus automatic start-stop controls afford users of d-c arc welders an opportunity to effect power savings which in many cases may exceed the 20 per cent reduction requirements imposed for the duration of the power shortage, while at the same time reducing the owner's operating costs each year by more than the first cost of the control equipment.

Boat Patch Gluing Time Cut 40%

A CASUAL remark plus an individual's ingenuity have developed an almost revolutionary time saver in the plywood plant of the Long-Bell Lumber Company at Weed, California.

It is a boat patch glue applicator which has trimmed 40 per cent off the usual time required for gluing boat patches. With the time saving brought about by the invention, the process of patch preparation has also been increased.



• A Long-Bell Lumber Co. employee's ingenuity resulted in this boat patch glue applicator, which trims 40 per cent off the usual time required for gluing up of boat patches.

A casual remark by millwright Hap DeLong as he watched Mrs. Auda Samples rack and spray the patches, was overheard by Panel Foreman Mario Marchi. After DeLong had repeated the remark to Marchi, the ingenious mechanic disappeared into his workshop and started to work.

The first model of the glue applicator gave almost a Rube Goldberg appearance with its rubber bands, bobby pins and any other handy material. The model was made of wood. Despite the fact that practically everything except the kitchen sink was incorporated in the first boat patch glue applicator, the gadget performed its task with regularity and determined success.

A bit of redesigning, with the expanding of this part and the whittling away of another, and the applicator entered the machine shop to emerge a member of the steel family.

The applicator is in reality a miniature glue spreader with the exception of the two wheels. They are grooved to a "V" shape to take the boat patches. The wheels rotate in Urea Resin glue and the operator merely pushes the boat patch down between the two "V" shaped wheels and the spring tension then carries it on through to complete the gluing process.

The glue applicator has one fixed wheel with the other operating on a slide with spring tension to allow the wheels to follow the contour of the patch, resulting in a uniform spread of glue on the edge. Rubber shields fit closely around the wheels to keep the excess glue from the sides of the wheels. The control of glue spread is accomplished with a small doctor bar and the excessive glue is kept in the hopper pan.

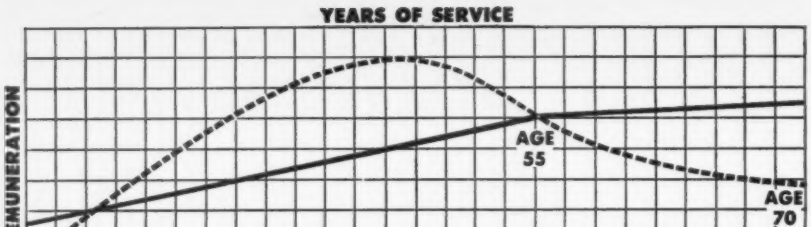
Most common method of applying glue to boat patches requires the placing of patches face to face on racks and the application of the glue with spray guns or brushes. After this operation the racked patches are allowed to dry. After which it is necessary to separate the patches which have adhered to one another due to excessive glue.

Marchi's boat patch glue applicator eliminates the necessity of pairing up, racking and separating the patches in addition to the application of glue by spray gun or brush. In addition to saving 40 per cent of the time generally used for the operation, the convenience and speed of handling the patches has been increased.

After the operator has passed the patches between the grooved wheels of the applicator, the patches are placed in drawers for procuring before being used in the hot plate patch. The placing of the patches in drawers make storage of the patches less cumbersome.

The boat patches are used to replace defects with clear wood after defects such as knots and pitch pockets have been removed. A "Defect Cutter" cuts a hole the exact size of the boat patches.

The Long-Bell Plywood Plant at Weed is the oldest on the Pacific Coast operating in pine. The plant was established in 1910 as a veneer plant and the product was used entirely by the company in its own door manufacturing operation. As the demand for plywood increased, the operation was expanded, with the result that the plant has been undergoing extensive modernizing operations for the past few years. The modernization will be completed as soon as machinery is made available.



• Relationship of wages to value in productive life of average employee. Ultimately it becomes cheaper to retire employees on a properly-designed pension or profit sharing plan than to retain them at wages greater than their value to the company.

Metal Trades Assn. Servicing Plans For Retirement Income

A RETIREMENT income planning service for officers and employees and member companies of the Metal Trades Manufacturers Association of Southern California has been arranged by that organization. It is intended to save members money from the standpoint of research expense and corporate trusteeship fees, and to provide participants with protection from involvement in income tax problems.

Apparently this is the first manufacturing trade association of its kind to adopt such a plan for overcoming the legal and technical complexities of pension plans, although it has been done for some savings and loan leagues. Until this scheme was set up, members of the metal trades organization had only the usual alternatives of using a ready-made insurance company plan which might not entirely fit their individual needs, or else to start from scratch and work out something independently, with the danger of encountering pitfalls.

Under the Metal Trades Manufacturers Association program, servicing of each member's plan is provided for, and all member companies participating have the benefits of a corporate trustee under the master agreement of trust set up by the Association. At the same time, each company plan is completely separate and distinct. There is no co-mingling of funds, responsibilities or obligations.

When a member company expresses interest in creating a pension, retirement income or profit sharing plan, a representative of the servicing agent of the Association will call and outline the master plan and be prepared to work with the company in drafting a program tailored to fit the member's needs.

There are certain aspects of any pension plan which must be carefully considered and decisions reached that will insure the plan being legally acceptable to the Bureau of Internal Revenue. To meet the requirements of the federal law, a few fundamental principles are involved:

1. The retirement income must be reasonable.
2. It must be made available to all employees within a proper classification.
3. It must be funded in such a way as to be sound.
4. There must be a stakeholder, such as a trustee, to hold the funds, someone else other than either the employer or the employee.

The plan for each individual company must be tailored within these prescribed limits. However, there are 10 major points or basic elements which must be decided for each plan. These points are listed in the box on the opposite page.

Once these 10 points have been determined, the method of funding the plan must be worked out. This is an important question to which a great amount of attention is given. Also in meeting budgetary limitations the benefit of experienced advisors becomes available for devising the most effective plan for the amount of money that the member company can afford to spend.

After all of the policy decisions have been made, there is still a detailed routine to be gone through in order to put the plan into effect for an individual company. This work of installation is one of the very important parts of the service that will be rendered to member companies by the servicing agency.

With moderate allowances for individual differences, the installation comprehends all of the following steps:

(a) Preparation of all documents required by the trustee from the employer and employee.

(b) Preparation of data and financial reports required by U. S. Treasury Regulations 111 under Section 29.23 (P) (1)-(2) and other regulations and laws pertinent to the plan.

(c) Cooperation in securing all permissions, approvals and authority required by the Pension Division, Bureau of Internal Revenue, and other agencies of government.

(d) Preparation of a descriptive booklet for distribution to employees explaining in detail the operation of the plan, the cost of printing and distribution to be borne by the employer.

(e) Preparation of a memorandum for each individual employee illustrating the benefits of the plan.

(f) Conducting all meetings with the employees and giving such personal interviews to eligible employees as may be necessary so they become acquainted with the benefits of the plan.

(g) Preparation of all necessary forms relative to the transmitting of such forms to the trustee, examining policies in cooperation with the trustee, and delivering certificates or photostats of policies to the participating employees.

It is further recognized that the greatest benefit to employer-employee relations can only be had when a plan is kept currently "sold" to the employee. This service of explaining the plan each year and pointing out its benefits is combined with the necessary accounting and reporting procedures which have to be done and constitutes the continuing service of the servicing agency to the member companies.

(a) An annual analysis of the plan formula with provisions of the Internal Revenue Code and the regulations of the U. S. Treasury, keeping the plan within the limitations imposed by such rules and regulations.

(b) Calculation of increases or decreases in benefits.

(c) Transmittal of notices and distribution of benefits in the event of death, disability, retirement, or severance of employees.

(d) Data for accounting procedure for the member association.

(e) Preparation of data for the Bureau of Internal Revenue and U. S. Treasury Regulation 111 under Section 29.23 (P) (1)-(2) and Schedule C, D and E.

Trust Agreement Features

The Agreement of Trust executed by the Metal Trades Manufacturing Association on behalf of its members with the Corporate Trustee provides that the member company appoint an Advisory Board to administer the retirement plan, which, in effect, means the issuance of written instructions to the Trustee as to the specific duties the Trustee is to perform under the individual plan. The Master Trust Agreement enumerates the duties and responsibilities of the Trustee administering the plan.

An employee participating in the plan is not given any legal or equitable rights against the member company except as expressly granted to them and does not give any participant the right to be retained in the service of the company, and all employees shall remain subject to discharge to the same extent as if there was no plan in effect.

It is provided that while the member company hopes and expects to continue the operation of the plan, the right is reserved to it to amend or discontinue the plan at any time or to reduce the contributions or suspend for a period of time the payments provided for by the plan.

The Agreement also provides for the optional continuance of the plan in the event of the merger or consolidation. The interest of any participant or his beneficiary

cannot be sold, assigned, hypothecated, or transferred, and he is prohibited from anticipating, encumbering, or assigning his interest under the plan.

While the trust accounts of all member companies using the plan are held by the Trustee, the Trustee is bound to treat each member account as an entity, and no charges or credits may be made to or against the account of any company in favor of any other of the Trust accounts. Each participant is also treated as an individual and his interest in the Trust cannot be impaired to the benefit of any other participant holding a beneficial interest in the Trust.

The servicing agency chosen by the Metal Trades Manufacturers Association is National Associates, Inc., who have devised pension trust plans for some of the largest industrial corporations in the West. They have been retained to serve the Association and any member company in setting up and supervising the operation plans. The corporate trustee is the Title Insurance and Trust Company of Los Angeles.

10 MAJOR POINTS FOR RETIREMENT PLANS

1. ELIGIBILITY. It must be decided how long a period of service employees must have before becoming eligible to enter the plan. It is customary to have a waiting period of from six months to five years .

2. NORMAL RETIREMENT AGE. The plan must be established with a specific age in view. However, it is possible to establish a variable retirement age after a period of years of service. Since Social Security uses the age of 65, most plans use that age. However, a more suitable age can be used if a company so desires.

3. AMOUNT OF RETIREMENT INCOME. This is a determination which must be made and can be approached in several ways. It can be a fixed percentage of the salary at time of retirement, or it can be determined on a percentage of salary for each year of employment, or it can be tied into a profit sharing formula. There should always be a minimum retirement income to make the plan effective for those in the lower salary brackets.

4. COMPENSATION. The basis upon which the benefits under the plan will be computed must be determined.

5. INCREASES OR DECREASES. There must be provisions in the plan for adjustments of the benefits based on salary increases or decreases.

6. DEATH BENEFITS BEFORE RETIREMENT. It must be determined if the employee dies before retirement what is to be done with his contribution, as well as the contributions of the company which are standing to his credit at that time.

7. PERMANENT AND TOTAL DISABILITY. A similar decision to that in the case of death must be reached on the question of what shall be done if an employee becomes disabled.

8. DEATH BENEFITS AFTER RETIREMENT. Because of the variance in needs of the participants in the plan, various options should be offered the employee on this question.

9. SEVERANCE BENEFITS. A schedule must be prepared to provide for the contingency of the employee leaving the company's employ before his retirement. What is to be done with his contributions and the employer's contributions at that time must be set forth in the plan.

10. CONTRIBUTIONS. How much of the total cost of the plan is to be contributed by the employer and the employee is a very important decision. Experience indicates that some contribution by the employee is desirable.

Gus Backman Heads Western States Council

The Western States Council, organized in November, 1944, to become an overall representative of the chambers of commerce in the eleven Western states, has finally gotten itself a president from the mountain area, instead of the Coast.

Not that Gus Backman of Salt Lake has not been long since importuned to take the job, but this was the first year he felt free to take on so much outside work. Following the custom of having a nearby secretary, Ezra Fjeldsted of Ogden was chosen for that place.

Two days of discussion took place at the annual convention, held this year at Long Beach, Calif., out of which came the following decisions:

Construction of a railroad into Alaska from the West Coast was urged, but without committing the Council to recommendation of any specific plan. Hawaiian statehood was recommended.

Although only the three Coast states are directly affected by the tidelands situation, all concurred in principle with the idea that they shuld be under jurisdiction of the states, because otherwise streams, rivers, waterways and mineral resources might be federalized.

Study is to be given by a committee to forest management, the sustained yield program, range management and grazing.

Universities and colleges in the West are to be checked for their research projects and economic studies, in an endeavor to eliminate duplication and overlapping.

The steel committee, which gained such prominence in the Geneva case, is to be continued and expanded.

Efforts will be continued to get the 15 per cent transportation and communications taxes repealed, because they work hardship on the West where distances are greater.

The government will be urged to limit sales at post exchanges, ships stores and other government service stores to service employees, and not to permit sales to other civilian employees except in remote outposts where no other facilities are available. Sales to be restricted to necessities of life, this to stop abuses which have arisen in the reclamation service and elsewhere, such as refrigerators being bought for friends and relatives.

• Western members of the Advisory Board of the Western Packaging Exposition and members of the Council for the Western Conference on Packaging, Packing and Shipping met recently to plan for conference to be held in San Francisco, August 10 to 13, 1948. Standing: (left to right) P. S. Labagh, California Packing Corp.; S. F. Thune, National Starch Products, Inc.; Dr. Wm. Rabak, Department of Agriculture; Peter D. Bowley, Peter D. Bowley & Associates; Kenneth O. Dean, Good Packaging; Spencer Tilden, Arabol Mfg. Company; Edw. Grube, Stecher-Traung Litho. Corp.; Leo Blank, Stecher-Traung Litho. Corp.; Wm. DeBack, Food Machinery Corporation; Dr. E. M. Mrak, University of California; L. B. Williams, California Dried Fruit Research Inst.; Dr. Paul C. Wilbur, Food Machinery Corp. Seated: (left to right) R. J. Christ, The Dobeckmun Company; Kenneth K. Dean, Good Packaging; Saul Poliak, Clapp & Poliak, Inc.; E. J. Heimer, Barrett-Cravens Company; William H. Jaenicke, Mailler Searles, Inc.; P. O. Shuttleworth, Zellerbach Paper Company; William K. Allen Ferguson, Reynolds Metals Company; and Earl W. Carlsen, of the Washington State Apple Commission.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

No Control Needed For Lumber Industry

Douglas Fir Plywood representatives confer with Office of Industry Cooperation in regard to controls

By ARNOLD KRUCKMAN
Washington D.C. Editor of
Western Industry

WASHINGTON, D.C. — The Douglas Fir plywood industry came to Washington in force at the end of March, on invitation from the Department of Commerce. The ostensible occasion was the conference called by the Office of Industry Cooperation, which is headed by John C. Virden, and which works under the terms of the Industry Agreements Act and the Anti - Inflation Law.

The Virden unit was created by executive order of the President, to implement the law. In effect the whole business is really the formal activation of the Taft Anti-Inflation Law. It will be recalled that this law, or phases of it, was aimed at setting in motion voluntary controls over materials and commodities and services in short supply.

Virden, an electrical equipment manufacturer of Cleveland, Ohio, a protege of General Electric, also was one of the representatives of the electrical equipment industry in WPB during the war. He has been very busy here for the past five or six months, but his activities have largely been kept under wraps.

When he came he was extremely pessimistic about the prospects of making voluntary control of allocations effective. It was then assumed, and is still the general thought around Washington, that part of Virden's job is to demonstrate that voluntary controls are unworkable. The people "in the know" are watching for that moment when the Administration will determine that it is the right time to demand that Congress provide the necessary legal authorization to establish mandatory controls.

It is the common understanding that the President has the authority to call for mandatory controls; but there are some doubts; and more important still, the Democratic administration, in an election year, does not wish to accept sole responsibility for what may be a very unpopular act. For this reason it seems to be the plan to force the Republican Congress to share any blame which may follow the imposition of controls.

There is no doubt that controls will come. It is quite probable the whole troublesome question was discussed either formally, or informally, with the visitors from the West. It usually is one of the major problems upon which the conferees are sounded.

Northwest Representatives

The group from the Pacific Northwest, and elsewhere, included: J. B. Simpson, general manager, Buffelen Lumber and Manufacturing Co., Tacoma; R. E. Seeley, manager, Simpson Industries, Seattle; E. W. Daniels, president, Harbor Plywood Corporation, Hoquiam; Fred L. Johnson, general manager, Anacortes Veneer, Inc., Anacortes; Fay Oval, manager factory sales, Long-Bell Lumber Co., Longview; B. V. Hancock, vice-president, Cascades Plywood Corporation; Clay Brown, president, Humboldt Plywood Corporation; J. B. Malarkey, vice-president, M & M Wood Working Co. (the last three of Portland); Enar Erickson, Peninsula Plywood; James L. Buckley, vice-president, Georgia Hardwood Lumber Co., and Lawrence Ottinger, president, United States Plywood Corporation, both of New York City.

All those named were appointed as members of the President's Plywood Industry Advisory Committee, which functions as part of the Office of Industry Operation, in the Department of Commerce. The committee is part of the structure of similar industrial committees which is being set up to cover every stitch and stiver of the national economy.

The real down-deep purpose of the calling of these committees into existence is to support actively the operation of the Economic Cooperation Administration, the functional organism which already has begun to ship urgently required materials to the 16 nations of Europe which benefit by the now legal Marshall Plan.

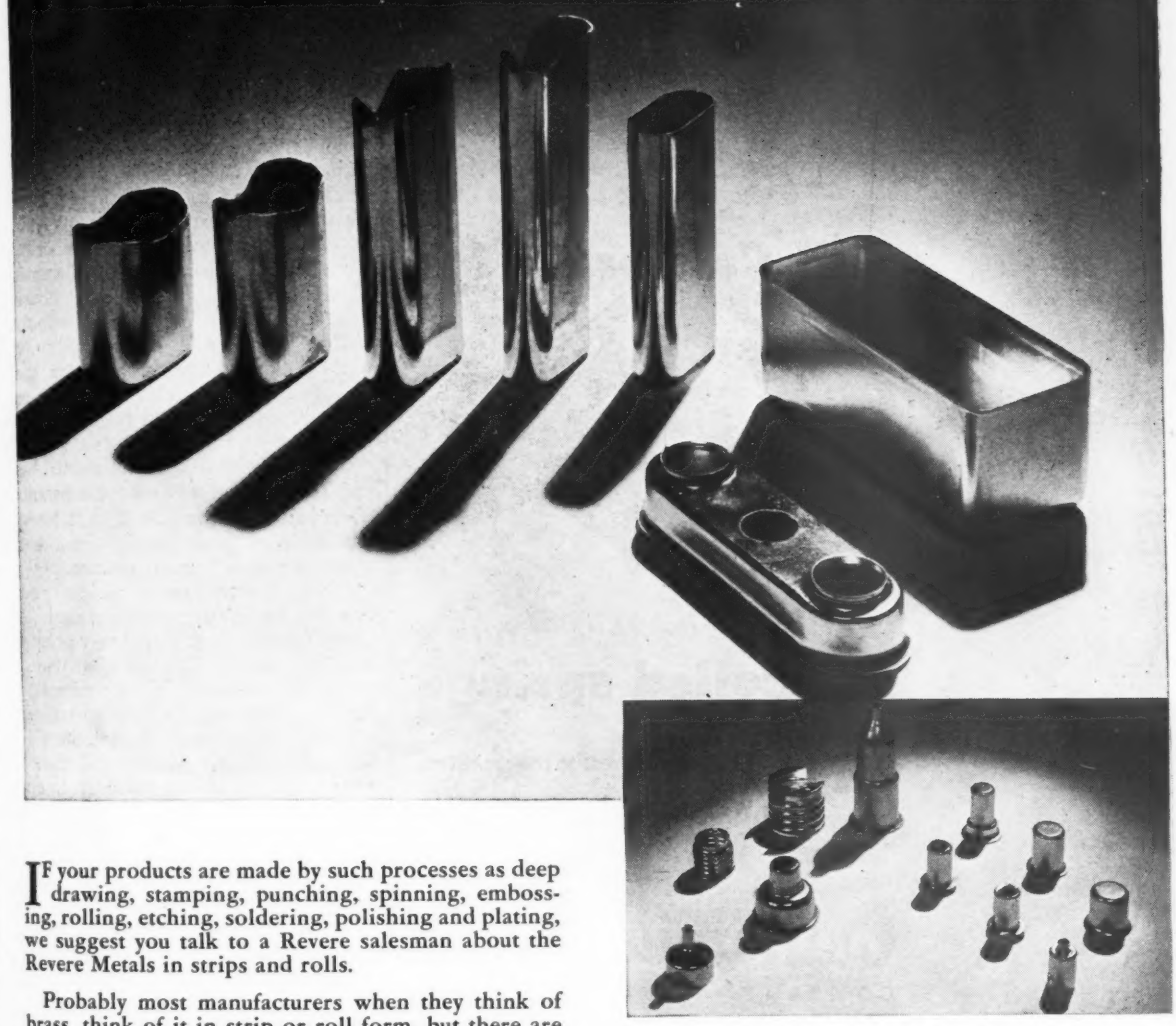
Consultation with these Advisory Committees has enabled the federal government, under the indirect guidance of the State Department's bright young man, Paul Nitze, to make an inventory of those industries whose products are needed "over there." The background supplied has enabled experts in the Department of Commerce's commodity branches to make definite arrangements with specific producers and manufacturers to ship their products to specific countries as soon as the Administrator gives the word.

Undoubtedly exact specifications have been indicated, and the terms of purchase have been arranged. The billion dollars provided by law through RFC, and the formal appointment of the Administrator of ECA, was all that was necessary to give the green light.

We are told here that apparently under Nitze's leadership, as lieutenant for Undersecretary of State Lovett, who in turn was inspired by Secretary Marshall, the experts and specialists and chiefs and subchiefs of the different agencies, at all

(Continued on page 54)

REVERE STRIP AND ROLL FOR ECONOMICAL MANUFACTURING



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Specification may seem obvious to you, or it may not. In any case, it is suggested that you permit a Revere salesman, and if necessary a Revere Technical Advisor, as well, to study your production methods and end products. Revere customers in numerous cases have been able to effect important economies by following our recommendations for changes in such things as alloy, gauge, temper, and dimensions of strips and rolls. For example, a change in temper may reduce the number of anneals, and a reduction in width may cut material costs and lessen the amount of scrap. Strips and rolls are exceptionally useful forms of the Revere metals, and Revere will gladly cooperate with you in studying the important subject of specification.

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(Continued from page 52)

levels, are organized in interdepartmental committees, which will work out the problems of conflict of policy, or overlapping authority, or any other collisions, to remove all friction of the kind that was so troublesome during the war.

When the businessman comes to town in connection with this new potential war economy, he will probably not be compelled to spend weeks running around from one office to another to find the person with whom he should negotiate. They tell us that the interdepartmental machine is so well oiled that when they go down on the Hill to testify before highly critical committees, there is no conflict of views between the top flight officials or between any of those drawn from the lower levels.

It is regarded as certain here that the operation of the Marshall Plan will force the Congress to initiate a law which will legalize some form of controls over the allocation of materials, commodities, and services. It is generally assumed that price controls also will come. There is still not a very clear picture as to the extent of the necessity for controls, or just exactly what form they will take.

The big point to bear in mind is that we are heading into a war economy; perhaps it might be more accurate to call it a near-war economy.

All this fits with the creation of the industry advisory committees and the conferences with the federal officials by the plywood industry folk from the Pacific Northwest. The officials who were present included Acting Secretary of Commerce David K. E. Bruce, who normally is Assistant Secretary for Foreign and Domestic Commerce; John C. Virden, head of the Office of Industry Cooperation; Mathias Niewenhous, head of the section in the Office of Industry Cooperation which has charge of lumber, and Raymond K. Foley, Administrator, Housing and Home Finance Agency. The visitors also met officials of the National Resources Security Commission, another very active mobilization unit.

The result of the discussions was that reportedly there are resources of 1,800,000,000 square feet of soft timber plywood; that Department of Commerce experts estimate the domestic housing needs at 981,000,000 square feet; that, obviously, no controls are required to protect the domestic needs; and that there apparently is no excessive draft from railroads, boat builders, and furniture manufacturers.

Shortages may stem from potential ECA requirements and from the yet nebulous war economy demands. But at present lumber is not giving either the industry or the government much concern.

Export controls under present peacetime conditions were also discussed. The lumber people want complete de-control. However, there is little prospect that the export of any lumber will be eliminated. But "controls" mean jobs in government.

Two prominent men of the Pacific Coast have been leading the national fight to wipe out some of the Office of International Trade regulations which have raised so much turmoil among exporters. W. G. (Bill) Herron, on behalf of New York exporters, went to the Congress and secured the introduction of bills which already have induced the OIT people to remove the hated qualification which makes price the criteria for export of many commodities and materials in short supply.

Under the operation of this regulation the exporter who offered the lowest price was certified by OIT export controllers for licenses. Bill has been helped in this fight by Christy Thomas, of the Washington office of the Seattle Chamber of Commerce. There is no doubt that some of the bills before the Congress will be enacted.

The real fight now is on the general policies of the Director, Thomas C. Blaisdell, Jr., and his deputies, F. E. McIntyre and Wallace S. Thomas. These are the men who came into the picture from the old Federal Export Administration, whose personnel is regarded as one of the most radical groups in the old New Deal setup.

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LOS ANGELES SAN FRANCISCO DENVER SEATTLE

WESTERNERS AT WORK...

Arizona

K. N. Gutman appointed mgr. of Flagstaff mill of Southwest Lumber Mills, Inc. The mill was reopened recently, having been completely rebuilt since it was destroyed by fire a year ago.

California

Aircraft

Harold Crow, general sales manager of Pacific Airmotive Corp., Los Angeles, upped to v.p.

J. V. Naish promoted to position of factory mgr. of Northrop Aircraft, Inc., Hawthorne. He is succeeded by **Conrad Kunze** as procurement head. **C. B. Spencer,** formerly production supt., named assistant factory mgr. and production superintendent.

• Svante Eikrem (left) and Fay Brainard (right) promoted by Hyster Co., Portland. Mr. Brainard was appointed to newly created position of special assistant to Eugene Caldwell, the firm's gen. mgr. Mr. Eikrem succeeds Mr. Brainard as plant engineer.

Chemicals

Barclay K. Read, former ass't sales mgr., succeeds **Sidney S. Lawrence,** retired, as sales mgr. Western division of Shell Chemical Corp., San Francisco.

Professor G. K. Rollefson, dept. of chemistry, U. C., Berkeley, elected chairman, California section American Chemical Society, succeeding **Robert Matteson** of California Research Corp. **Professor Richard Wistar,** Mills College, vice-chairman. **George M. Cook,** California Research Corp., and **Dr. Fred D. Tuemmler** of Shell Development Co., Emeryville, reelected sec. and treas., respectively.

Food Packing

John D. Miller and **R. C. Crampton** appointed v.p.'s of **A. Schilling & Co.,** San Francisco.

Orlin C. Harter, Harter Packing Co., Yuba City, elected pres., Canners League of California; **A. W. Eames,** California Packing Corp., and **L. J. Taylor** of Libby, McNeill & Libby, vice-presidents; **M. A. Clevenger,** exec. v.p.; **W. S. Everts,** staff v.p.; **Sylvia Kempton,** sec'y, and **R. J. Marsh,** treas.

Charles J. Ford, traffic mgr., Sperry Mills in Tacoma, chosen traffic mgr., new General Mills cereal plant in Lodi. **Arthur Allen** transfers from General Mills Portland office to replace Mr. Ford.

Manufacturing

John B. Keir appointed chief engineer, Fruehauf Trailer Co. of California, Los Angeles.

Clinton E. Stryker, formerly pres. of Adel Precision Products Corp. and Aerco Corp., Burbank, elected pres. of Maysteel Products, Inc., with plants in Wisconsin.

Ed Hinkley of Portland becomes mgr., new Southern California branch plant of Mail-Well Envelope Company of California.

John M. Garoutte named works mgr. of the Permanente Cement Co.'s Permanente plant. Formerly works mgr. of the company's alumina plant at Baton Rouge, La., he is succeeded there by **Howard Church.**

Hans Bohuslav, formerly with Enterprise Engine Co., San Francisco, joins Engineering Controls, Inc., Los Angeles, as v.p. in charge of engineering.

Ford M. Tussing, v.p. of The Paraffine Companies, Inc., Oakland, appointed to board of directors of National Association of Manufacturers.

Dale Douglas appointed manager of the Chevrolet assembly plant in Oakland. Former plant manager for Chevrolet assembly operations at Janesville, Wis., in Oakland plant since 1937. Succeeds **Frank Fitzpatrick,** who resigns to become a dealer in Concord, Calif.

All officers of Marchant Calculating Machine Company of Oakland were reappointed as follows: **Edgar B. Jessup,** pres. and general mgr.; **Wallace W. Knox,** v.p.; **Fred C. Elstob,** sec., and **Wayne W. Finn,** treas.

E. A. Rasmussen, formerly sales mgr., Southern Division of General Paint Corp., with headquarters in Los Angeles, transferred to San Francisco. He is succeeded by **R. L. Yerby.**

E. M. Douglas of South Bend transfers to Studebaker Pacific Corp., Los Angeles, as v.p. in charge of manufacturing. He succeeds **Stanley Whitworth,** retired.

James H. Marshall named assistant to pres. of California & Hawaiian Sugar Refining Corp., Ltd., San Francisco. He was formerly director of the sugar branch, U. S. Dept. of Agriculture.

Paul Young appointed acting general mgr. of Golden State Co., Ltd., San Francisco. He was formerly v.p. and assistant to the president.

Shipping

E. Russell Lutz., exec. v.p. of American President Lines, Ltd., San Francisco, named to newly created post of v.p. of foreign administration. **John T. Danaher** upped to ass't v.p. in charge of passenger traffic.

Pacific Far East Lines, San Francisco, have promoted the following: **John R. Wagner** to v.p. and gen. mgr.; **T. S. Lowry** to v.p. in charge of operations; **A. L. Papworth** to v.p. in charge of sales, and **L. G. Dunn** named freight traffic mgr., succeeding Mr. Wagner.

Nat Levy resigned as v.p. and sec. of the Moore Dry Dock Co., Oakland, after 42 years.

Oil

Chandler Ide elected sec. and ass't treas. of American Independent Oil Co., San Francisco. **N. P. Isenberger** upped to v.p. in charge of geological and exploration activities abroad.

C. la V. Larzelere elected sec. of Signal Oil & Gas Co., Los Angeles.

Industrial Service

Kenneth R. MacDonald, aviation manager, named mgr. of agricultural dept., San Francisco Chamber of Commerce, succeeding **Alexander von Hafften,** now head of the chamber's Washington office. Mr. MacDonald also continues as aviation manager.

Steel

Russell R. Sweeny appointed mgr., Bethlehem Steel Co.'s Alameda repair yard to replace **F. S. McGuigan** who transferred to an executive position in the east. Mr. Sweeny was formerly assistant to the general supt. at Bethlehem's San Francisco yard. . . . **Frank D. Atkins** named management's representative for Bethlehem Pacific's Los Angeles plant. Mr. Atkins was formerly management's representative at the company's Seattle plant.

Wayne D. Dukette, formerly mgr. of Ryerson steel service plant in Cincinnati, Ohio, named mgr. of new San Francisco plant of Joseph T. Ryerson & Son, Inc. **Ray C. Page,** assistant sales mgr. in Chicago, transfers to Bay Area as sales manager.

Haskell C. Carter named v.p. in charge of manufacturing of Iron Fireman Manufacturing Co., Portland. He will supervise production for the company's plants at Portland, Cleveland and Toronto, Canada.

Colorado

Blair Burwell and several associates have formed a new mining engineering firm with headquarters in Grand Junction. Mr. Burwell built the U. S. Vanadium Company plant at Uravan and recently resigned as v.p. and Western gen. mgr.

R. B. Curran upped to v.p. in charge of production of Carter Oil Co. in Tulsa. He has been v.p. and director of Carter and mgr. of Northwest division with headquarters in Denver.

B. C. Essig, v.p. of Gardner-Denver Company and past pres. of the Manufacturers Association of Colorado, named pres. of the Denver Chamber of Commerce, succeeding **Robert S. McIlvaine.**

Idaho

T. E. Roach, general manager of Idaho Power Company, elected president, succeeding **C. J. Strike,** deceased.

(Continued on page 58)

Why it pays to deal with a FRUEHAUF FACTORY BRANCH!

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FRUEHAUF TRAILERS

PLAIN HORSE SENSE
YOU CAN PULL FAR MORE THAN YOU CAN CARRY!

"Engineered Transportation"

WESTERNERS AT WORK . . .

(Continued from page 56)

Montana

Joseph D. Meagher appointed supt. of Carter refinery at Cut Bank; he has been acting superintendent since the recent death of **Floyd Johnson.**

Cecil H. Kirk upped from distribution engineer to electrical engineer, Montana Power Co., Butte. **Harold K. Dickinson,** supt. of Butte division, becomes distribution engineer. Both were formerly connected with the Great Falls division. **Clarence C. Bruckner,** assistant supt., named Butte division supt.

James F. Smith, assistant supt. of Anaconda Company copper refinery at Great Falls, assigned to assisting in starting a new copper refinery in Mexico City.

Isaac C. Jeffery, former chief of public utilities section, office of military government for Bavaria, designated power mgr. for Yellowstone district, Region 6, Bureau of Reclamation. He will maintain headquarters in Billings.

D. H. Thorpe named to direct new oxygen filling station and acetylene-producing plant of Linde Air Products Co. at Billings.

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Immediate delivery on oils and fatty acids:

ANIMAL FATTY ACIDS · CORN OIL FATTY ACIDS

COTTONSEED FATTY ACIDS · SOYA FATTY ACIDS

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GLYCERINE · HYDROGENATED FATTY ACIDS

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Oregon

Michael A. Gudman named comptroller and assistant to pres. of White Stag Manufacturing Co., Portland. He was formerly v.p. and treas. of Speedmaster, Ltd., of Oakland, Calif.

M. G. (Mel) Cutler transferred from Dallas mill of Willamette Valley Lumber Co. to Corvallis Lumber Co., an affiliate. He will serve as local manager.

Waldemar Seton, treasurer of Portland General Electric Co., upped to v.p. in charge of administration. **T. W. Fryou,** controller, moved into treasurer's position.

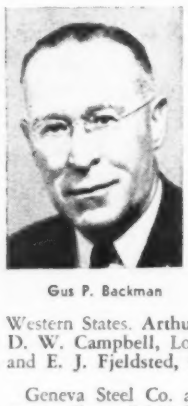
F. E. Chalfan, formerly sales mgr. of C. D. Johnson Lumber Co., Portland, now associated with the Morrill & Sturgeon Lumber Co. He takes position held by **Harry S. Pinkerton,** who recently resigned to establish his own business. . . . Mr. Pinkerton's new lumber firm, Pinkerton-Young Lumber Co., opened recently in Portland, with Mr. Pinkerton serving as pres.

Charles A. Zalhout appointed sales mgr. of Portland Shingle Co., Portland. He will have charge of distribution in the eleven Western states.

E. I. Snyder appointed district mgr. at Portland of Proctor Electric Co., Philadelphia appliance manufacturer. **W. H. Peterson** named to a similar position at Spokane.

Utah

Gus P. Backman, Salt Lake City, chosen to head the Western States Council, which includes Chambers of Commerce officials from eleven



Gus P. Backman

E. J. Fjeldsted

Western States. **Arthur Farmer,** Portland, and **D. W. Campbell,** Long Beach, elected v.p.'s, and **E. J. Fjeldsted,** Ogden, named sec.-treas.

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Roy Houston appointed gen. mgr., C. S. Kale Canning Co., Everson, replacing B. E. (Bert) Stratton, retired.

Bradley T. Jones named sec. of Pictsweet Foods Corp., headquarters in Mount Vernon.

George E. Pease becomes chief engineer, Morley Light Metals Co. of Renton. He was formerly research engineer for the Washington State College division of industrial research.

Lawrence Lundquist of Coquille, Ore., named mgr. of M & M Plywood Corp. plant at Longview, succeeding Elmer Hall, transferred to Eureka Plywood Co. at Eureka, Calif., along with head mechanic, Irvin Becker. Mr. Lundquist was formerly with the Smith Woods Products Corp. at Coquille.

Edwin F. Heacox of Longview appointed managing forester of Weyerhaeuser Timber Co., Tacoma, succeeding Wiliam H. Price, who resigned recently to accept a position in California.

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George S. Sturgess elected v.p. and division mgr. in charge of General Paint Corporation's Puget Sound and Alaskan operations. He was formerly sales mgr. of the company's San Francisco territory. W. W. Marsh transfers from Seattle as division mgr. to mgr. of Southern California and Arizona territory, with headquarters in Los Angeles.

Wheeler-Osgood Company, Tacoma, re-elected the following officers: Norman O. Cruver, pres.; W. M. MacArthur, Lionel J. Phillips and J. Henry Gonyea, v.-presidents; Paul M. Smith, sec.; R. H. O'Neil and Leo A. McGavick, assistant secretaries; J. F. Cushing, treas., and H. E. Haagen, assistant treas.

Boeing Airplane Company, Seattle, promotes W. W. Rutledge, mgr. of experimental production, to first assistant to v.p. of manufacturing. Lee Samples, former head of experimental production for the XB-47 project, named new head of all experimental production. Roger Holman, assistant to v.p. in charge of manufacturing, assumes direction of plant engineering and transportation department.

F. C. Ritner made v.p. in charge of personnel, Carboloy Co., Inc., Seattle. He was personnel director previously.

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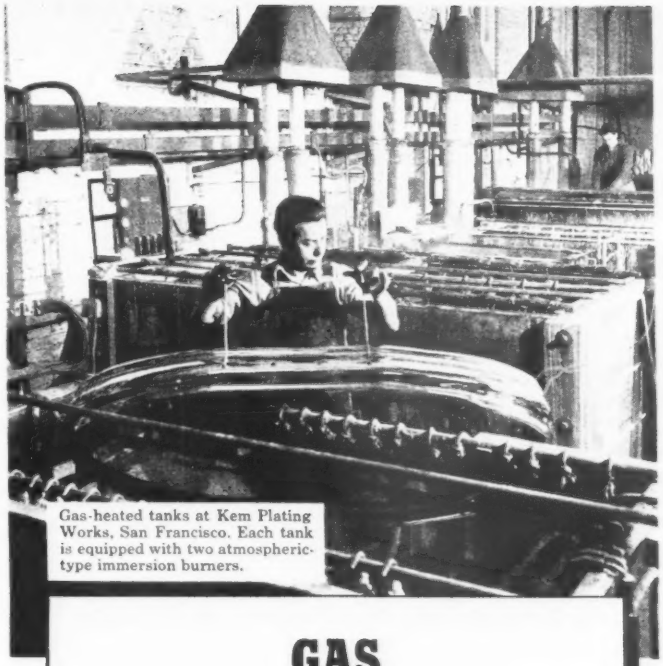

Gas-heated tanks at Kem Plating Works, San Francisco. Each tank is equipped with two atmospheric-type immersion burners.

GAS

IMMERSION BURNERS

provide controlled heat

FOR METAL PLATING

In plating metals, great importance is attached to these factors: exact temperature control, cleanliness and economy. Modern gas-fired equipment provides all three.

The various chemical "baths" must be maintained at just the right temperatures; for example, 200° F. in cleaning tanks, 180° in copper tanks.

Clean, economical gas fuel is efficiently employed in atmospheric-type immersion burners, with thermostatic controls actuated by a change of temperature of 1°, plus or minus. Thus, time is saved, guesswork eliminated, and perfect results assured at low fuel and labor cost.

THE PACIFIC COAST GAS ASSOCIATION

The West Prefers GAS

Better · Quicker · Cheaper

WESTERNERS AT WORK . . .

(Continued from page 56)

Montana

Joseph D. Meagher appointed supt. of Carter refinery at Cut Bank; he has been acting superintendent since the recent death of **Floyd Johnson.**

Cecil H. Kirk upped from distribution engineer to electrical engineer, Montana Power Co., Butte. **Harold K. Dickinson,** supt. of Butte division, becomes distribution engineer. Both were formerly connected with the Great Falls division. **Clarence C. Bruckner,** assistant supt., named Butte division supt.

James F. Smith, assistant supt. of Anaconda Company copper refinery at Great Falls, assigned to assisting in starting a new copper refinery in Mexico City.

Isaac C. Jeffery, former chief of public utilities section, office of military government for Bavaria, designated power mgr. for Yellowstone district, Region 6, Bureau of Reclamation. He will maintain headquarters in Billings.

D. H. Thorpe named to direct new oxygen filling station and acetylene-producing plant of Linde Air Products Co. at Billings.

Western Manufacturing Facilities

mean fast service!

Immediate delivery on oils and fatty acids:

ANIMAL FATTY ACIDS · CORN OIL FATTY ACIDS

COTTONSEED FATTY ACIDS · SOYA FATTY ACIDS

OLEIC ACID, RED AND WHITE · STEARIC ACID

GLYCERINE · HYDROGENATED FATTY ACIDS

LARD OIL · ACIDLESS TALLOW OIL · PITCH

W. C. HARDESTY CO · INC.

LOS ANGELES · CALIFORNIA

Represented in the West by

GRIFFIN CHEMICAL COMPANY

1000 Sixteenth Street, San Francisco

555 South Flower Street, Los Angeles

Oregon

Michael A. Gudman named comptroller and assistant to pres. of White Stag Manufacturing Co., Portland. He was formerly v.p. and treas. of Speedmaster, Ltd., of Oakland, Calif.

M. G. (Mel) Cutler transferred from Dallas mill of Willamette Valley Lumber Co. to Corvallis Lumber Co., an affiliate. He will serve as local manager.

Waldemar Seton, treasurer of Portland General Electric Co., upped to v.p. in charge of administration. **T. W. Fryou,** controller, moved into treasurer's position.

F. E. Chalfan, formerly sales mgr. of C. D. Johnson Lumber Co., Portland, now associated with the Morrill & Sturgeon Lumber Co. He takes position held by **Harry S. Pinkerton,** who recently resigned to establish his own business. . . . Mr. Pinkerton's new lumber firm, Pinkerton-Young Lumber Co., opened recently in Portland, with Mr. Pinkerton serving as pres.

Charles A. Zalhout appointed sales mgr. of Portland Shingle Co., Portland. He will have charge of distribution in the eleven Western states.

E. I. Snyder appointed district mgr. at Portland of Proctor Electric Co., Philadelphia appliance manufacturer. **W. H. Peterson** named to a similar position at Spokane.

Utah

Gus P. Backman, Salt Lake City, chosen to head the Western States Council, which includes Chambers of Commerce officials from eleven

Gus P. Backman

E. J. Fjeldsted

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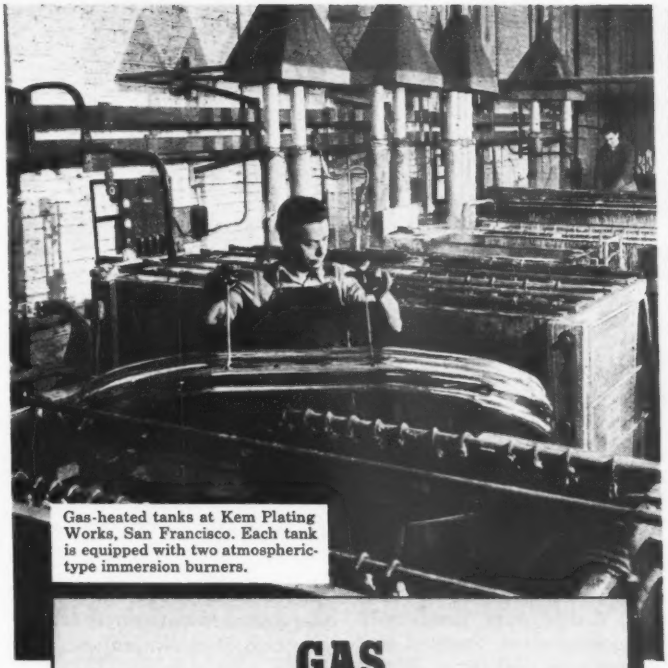

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GAS

IMMERSION BURNERS

provide controlled heat

FOR METAL PLATING

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THE PACIFIC COAST GAS ASSOCIATION

The West Prefers

GAS

Better · Quicker · Cheaper

Steel Situation Appears Brighter in Los Angeles

Hollywood competing with Britain at Home;
Movie profits must be equal, says England

LOS ANGELES — The steel situation gradually is beginning to look brighter, despite many clouds still banked up on the horizon. Some of the tangible improvements include:

(1) Granting of a $3,000,000 loan by RFC to Kaiser for construction of a seventh open-hearth furnace at the Fontana mill — to be in operation in about six months. This word was accompanied by the cheering news that the government agency also is considering lending enough to build still another furnace. Perhaps the Fretz-Moon pipe mill at Fontana may be able to get up to a three-shift basis, although pipe production now is limping along on two shifts a day.

(2) Starting of actual work on the Geneva plate mill conversion, which will provide for hot-rolled coils of light-gauge flat rolled steel. Columbia Steel will convert these coils into cold-rolled sheets and tin plate in its new cold reduction mills.

These developments give hope for speed-up of much production now dawdling because of lack of steel. Nash - Kelvinator has just announced that it expects to get its El Segundo assembly plant rolling by fall, after long delay because of the materials shortage. Studebaker, too, has declared its intention of adding a new plant for truck assembly to its present passenger car operation here.

Norris Stamping is launching a new venture, production of liquid gas cylinders. Like others, Norris has had steel problems, being delayed in completing two large contracts for pressed steel bathtubs because of the scarcity of materials, but has been able to get enough stainless steel to keep rolling out its new line of stainless beer barrels and copper-bottomed cooking utensils.

Steel fence posts made in the West soon will move in carload quantities to midwestern markets as result of freight rate reductions of from $18 to $31.40 per ton. The reduction will permit Los Angeles to meet eastern manufacturers halfway across the continent in competition.

Long suffering along with industry from the freight car shortage, Western agriculture will be helped by construction of 3,000 new refrigerator cars to be built by Southern Pacific and Union Pacific in their shops at Colton and Roseville.

Hollywood vs. Britain

Hollywood feels better since the British abolished the 75 per cent tax on U. S. movie earnings in England. Not equally good news, however, was the arrangement whereby profits on British showings may be pipelined back home only to an amount equal to the earnings of British films in this country. It means competition in Hollywood's own back yard to the tune of perhaps $20,000,000 annually — and a drastic cut in the $50,000,000 previously derived from showings of some 400 U. S. films in England's 5,000 cinema palaces.

In the six days following signing of the agreement, movie companies broke all previous U. S. records for weekly air shipments by flying more than 5,000 pounds of reels and advertising materials to London via Pan American Clippers alone. Thus came the good news to London that such classics as "Forever Amber," "Nightmare Alley," "Sitting Pretty," and "You Were Meant For Me" were on their way to the waiting British public.

So far, the psychological effect on Hollywood's low morale has been profound but there has been little rehiring of the army of unemployed movie people. It is not known how much this fact is due to the industry's annual slowdown until after the tax assessor has made his appraisal of completed film footage in stock, and how much of it comes from the discovery that goodly numbers of "technical advisers," assistant assistants to producers' assistant assistants, and other minor studio fauna, could be dispensed with without perceptible effect on the finished product.

Technicolor, Inc., managed to turn in an exceptionally profitable year's earnings despite the downward trend in the major studios' profits. Dr. Herbert T. Kalmus, president, said the company's capacity for service and product is completely sold out for 1948.

The trend toward colored pictures continues strong, unaffected by the Department of Justice's anti-trust suit charging Technicolor with monopolistic practices. With the block-booking suits still freshly in mind, Hollywoodians shrug off the importance of the suit. The number of embryo natural-color film enterprises that have died a-borning during the past quarter-century is exceeded only by the number of early-day automobile manufacturers whose names have passed into oblivion.

War talk has caused no immediate speed-up in operations at local aircraft plants, despite a brisk boom in aviation stocks. Armament does not move forward without appropriations, and as yet the Congressional hopper has not turned out its grist of money bills for next fiscal year.

Contracts still are of token size, aimed at nucleus production of new models. Northrop, for instance, recently was awarded a $5,500,000 order for 23 three-engine assault transports, military versions of the company's Pioneer, which originally was designed as a commercial ship able to pack heavy loads into and out of small unimproved airfields such as those in many foreign countries. Northrop is down from a war peak of 10,000 employees to a "stabilized" work force of about 4,500 and will need do no large-scale hiring.

Lockheed, currently down to 12,000 from a peak roster of 92,000 employees, has received a $5,000,000 order for 50 jet fighters, mainly for training and ex-

(Continued on page 62)

IF

you want to speed up office routine, minimize errors, cut the cost of paper work,

SPEED—one writing produces every copy the job requires. *Minimum errors*—without recopying, mistakes are fewer. *Lower costs*—no needless writing, needless handling, needless record-hunting.

No matter what business you're in . . . no matter if you use five thousand forms a year, or five million . . . you can operate for *less* with Uarco Business Forms. For a complete survey of your requirements—without cost—call your Uarco Representative.

UARCO INCORPORATED, Oakland, Calif.
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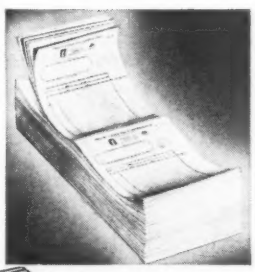
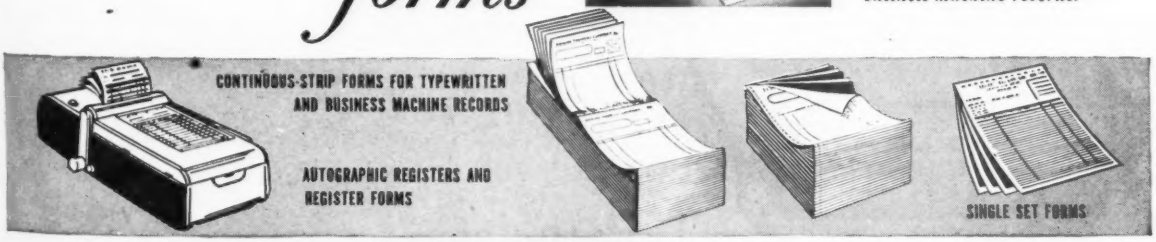
Offices in All Principal Cities.

try **UARCO** *business forms*



for instance . . .

UARCO Multi-Fold *Continuous Forms cut writing and handling time by continuously feeding the typewriter while the girl types —no carbon shuffling! Other Uarco forms provide similar economies for hand-written or business machine records.*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UARCO INCORPORATED *business forms*

Steel Situation Brighter in Los Angeles

(Continued from page 60)

perimental work. Sensational speed of these craft makes them invaluable at places like the Navy's Point Mugu experiment station, where they are used for tracking and photographing guided missiles and occasionally for shooting down missiles that have broken out of control.

A secret wartime project now promises to become an important cog in this nation's global air operations. Lockheed design of a turbo-jet engine, in the hands of Wright Aeronautical Corporation's New Jersey plant, may help make possible the world's first long-range air force. The engine's power of 8,000 horsepower, equal to that of a Diesel railroad engine, is compressed into a package weighing less than one of the locomotive's drive wheels. Efficiency of the design is said to have curbed the appetite of the fuel-hungry jet to the point where a heavy jet bomber can carry enough fuel for great distances at unprecedented speeds.

The former Downey plant of Consolidated Vultee is no longer idle, 600,000 square feet of it being leased to North American for light manufacturing, storage, and modification of the AT-6 trainer plane.

Success of "Skyway #1," the projected Washington-Los Angeles aerial highway with which the Los Angeles Chamber of Commerce startled Florida boosters into choking on their orange juice, has started a nation-wide rush to get aboard the bandwagon. No fewer than 23 similar personal plane skyways have been proposed to CAA. Roof signs with letters 10 feet high are going up by the hundreds. Communities everywhere are anxious to have their towns shown on the maps of tomorrow's air tourists.

The tentative national plan shows even-numbered skyways extending east-west, odd-numbered ones running north-south: among them routes from Montreal to Key West, Duluth to Texarkana, Winnipeg to Laredo, Great Falls to New Orleans, Denver to El Paso, Ellensberg (Wash.) to Las Vegas (Nev.).

Cross-country arteries will join Seattle to Boston, Vancouver-Portland to Salt Lake City, Sheridan (Wyo.) to Chicago, San Francisco to New York via Reno. To the flying fraternity, it's the biggest forward step since paved highways swept the country and prepared the way for the automobile.

One measure of this area's return to normalcy is the amount of tourist revenue now pouring into Southern California coffers. Visitors left behind them a billion dollars in the past two years, and 1947 totals reveal that tourism has climbed to top place among this area's major sources of income.

California Revenue

All Year Club figures show California revenues as follows: tourism, $467,341,-051; motion pictures, $350,000,000; aircraft sales, $328,231,000; oil, $321,000,-000; California apparel, $282,000,000; and citrus, $163,000,000. Before the war, petroleum ranked first, tourism second, movies third, and citrus fourth.

House-hungry native sons, neglecting to be thankful for this bounty, currently are hoping that the tourists stay that way and not decide to become "native sons," too. They are able to take some comfort from the fact that large-scale building of rental housing at last has got under way.

February's 7,000 building permits in Los Angeles County, an all-time high, included 2,500 units destined for rental. Total construction amounted to nearly three times the best score achieved during the war's frantic drive to build housing, backed by plenty of government money and the military's top priorities.

"House for rent" advertisements have returned again to the classified columns, usually coupled either with figures ranging upward from $125 a month or with veiled proposals for bonuses. Large-capital

(Continued on page 78)

How do you judge Cap Screws?
You find 10 important qualities in

CLEVELAND
Top Quality
High Carbon Heat Treated Cap Screws

made by
DOUBLE EXTRUSION
. . . the modern cold-forging method originated in our plant as the Kaufman Process

● Don't let quick judgment fool you on cap screws. Check these ten points that experts use when they cast appraising eyes on "1038 heat treated" quality: 1—approved steel analysis. 2—accurate forming to close tolerances. 3—clean-cut threads, class 3 fit. 4—concentricity of threads. 5—uniform lead on threads. 6—sharp corners on sides of heads. 7—good washer face. 8—machine-cut points. 9—correct two-step heat treating. 10—desirable finish (good appearance). Production by the Kaufman Process assures you cap screws that measure up to these qualifications. Write for folder "This is the Kaufman Process."

CLEVELAND *Top Quality* FASTENERS

The Cleveland Cap Screw Company
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
SPECIALISTS FOR 30 YEARS IN CAP AND SET SCREWS AND MILLED STUDS

LOS ANGELES 21
1015 Santa Fe Ave., Van Dyke 2994
SEATTLE 4
1006 Lowman Building, Seneca 2420
SAN FRANCISCO 5
50 Hawthorne St., Garfield 1-2075
DENVER 4
100 West 13th Ave., Main 0063

MADE BY THE ORIGINATORS OF THE KAUFMAN PROCESS FOR GREATER STRENGTH AND ACCURACY

Alternate Power Sources Help in Drought Situation

Majority turn to diesels, some to gas and gasoline engines, others find induction motors are cheaper

SAN FRANCISCO—Although electric power curtailments imposed on northern California in March because of drought conditions were temporarily lifted on April 12, industry is not yet out of the woods.

In the first place, if the late rains which made it possible to suspend the controls until June 1 do not prove sufficient to meet irrigation and power needs, curtailment may be reimposed. Also the present suspension of controls does not apply to new business, or to old business seeking to increase its power consumption.

Consequently alternate sources of power are diligently being sought. There was a big rush as soon as the original control was imposed to install diesel generating sets, while others were turning to induction motors which can be used as generators. As this issue of *Western Industry* was just going to press as the controls were lifted, it was not known how many would cancel their purchases of diesel equipment.

An oddity of the situation is that the Pacific Gas & Electric Company has actively promoted the installation of competitive means of generating electricity. Within a few days after the California Public Service Commission had taken over control of the distribution of electric power, the San Francisco sales division of the company had begun assembling a list of all available equipment, so that all anyone in need had to do was telephone in and report his needs, whereupon he was given immediately the names of all sources having what he wanted. The occasion has been a big harvest for everyone with generating equipment to sell.

Two of the largest purchasers of generators are Columbia Steel and Bethlehem, each of whom are investing $500,000 at their mills in Pittsburg and South San Francisco. Columbia is installing four 1,000-kilowatt units.

Some industrial establishments undoubtedly will keep their diesels permanently, but the PG&E does not figure that this will mean any important loss of business, in view of the inconveniences and annoyances of having to generate your own power. Besides, Australia is reported to be in dire need of power generating facilities, and therefore a likely spot to dispose of the equipment later.

Industrial operations will be able to come up to their previous level, but how much additional employment will become possible is doubtful. While the curtailment was on, it had a sharp impact on take-home pay.

A survey by the state department of industrial relations of 74 plants employing 88,000 persons, showed 39 plants curtailing operations, either by reducing hours, cutting down the force or by only working half a day or not at all on Saturdays. Average weekly earnings of 5,000 employees dropped from $62.04 in February to $53.17 in March.

If irrigation water fails in the summer months and early fall, the canning season may be affected somewhat, particularly in the growing of tomatoes. The San Joaquin Valley is the most critical agricultural area, because the Sacramento River carries more water and also has additional supply from Shasta Dam.

There have been equally severe drouths in other years, such as 1931, but the agricultural demand has been vastly stimulated by the world-wide food need and the efforts of the United States to relieve the situation. Rice farmers constitute the largest single block of water users. The increase in agricultural and industrial demand is shown by the fact that diversions on the Sacramento River have increased 38 per cent since 1939.

Control of the power distributed by the utility companies has been vested by the Public Utilities Commission in one of its engineers, Robert P. O'Brien, who has set up an operating staff for the purpose. He also cooperates with citizens' committees in the various areas which make the decisions in the "hardship" cases. Among those who have gotten relief are the American Radiator and Standard Sanitary Corporation, 35,000 kilowatts a month for their new plant in Richmond, and Chrysler Corporation, 60,000 kilowatts a month for the new Dodge assembly plant in San Leandro.

The deadlock between PG&E and the Bureau of Reclamation over distribution of power from Shasta Dam has been ended for this season by a temporary agreement to feed the Shasta power into the PG&E system.

Congressman Welch of San Francisco has introduced a bill in Congress to put a dam across the bay from Point San Quentin to Richmond to conserve fresh water coming down the Sacramento River and stop the encroachment of salinity from tide water. Objections raised to this are that the delta levees are mostly peat, which require low tides to drain them so they will not give way, and that the back pressure from the dam will eventually result in inundating the delta.

Discuss Reber Plan

Meanwhile both advocacy of and opposition to the Reber Plan for face-lifting all of San Francisco Bay are coming to the fore. The Oakland Chamber of Commerce has appointed a committee representing interests in various counties of central California to organize opposition.

Among the arguments against it are that enormous quantities of mountain storage would be required to maintain the upper and lower arms of San Francisco as fresh water lakes under the Reber Plan. The danger to the delta mentioned above is another; while still others are damage to the fishing industry and several salt works and chemical plants and the destruction of various East Bay harbors.

(Continued on page 66)

Take a peek

. . . inside your local Chase Warehouse.

You'll see mill products galore. You'll see quantities of brass and copper tube, sheet, wire, rod . . . and in addition, miscellaneous products . . . bearing bronze, welding rods, brass and bronze bolts . . .

That's why . . . when production lines can't wait . . . it will pay you to call Chase. Your local Chase warehouse (one of 22 from coast to coast) can supply you at once and can also arrange to have your really *big orders* promptly delivered from the mills.

Depend on this handy ordering system for all your copper-alloy needs. Remember, Chase service is as close as your phone.

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Alternate Power Sources

(Continued from page 64)

On the other hand, the report prepared for the San Francisco Bay Area Council by Industrial Survey Associates under the direction of Stuart P. Walsh points out that visiting engineers, economists and ordinary businessmen have repeatedly expressed amazement that so little has been done over the span of a century to change a landlocked basin that is four-fifths mud flats.

This report, "The San Francisco Bay Area — Its People, Prospects and Problems," is one of the most comprehensive economic reports ever made on the area. It calls attention to the fact that manufacturing employment in the area has not appreciably exceeded the rate of increase from 1940 to 1947 for the country as a whole and has not equalled records of some other Western areas. This is cited as indicating the need for expanding industrial effort.

The most urgent problem is declared to be urban and interurban transportation, with an integrated plan as a necessity. Land-use planning and coordinated water and shoreline development programs are described as prime necessities.

Per capita income for the area as of 1946 is mentioned as $1,754 per annum, compared to $1,531 for the state and $1,200 for the nation, due partly to higher wage levels. Total federal payroll is $208,000,000 annually, capital value of facilities $304,000,000, and federal purchasing contracts in California for the fiscal year ending June 30, 1947, nearly $215,000,000.

Chamber Discusses Problem

Industrial water supply has been engaging attention at the same time, and the last meeting of the plant location committee of the California State Chamber of Commerce was largely turned over to discussion of this question. From the San Jose area have come proposals for getting water from the proposed Folsom Dam on American River to supply Santa Clara and San Benito counties. The Folsom Dam is a Reclamation Bureau project. To deliver water as suggested would involve a big canal project like the Contra Costa canal now under construction as part of Central Valley.

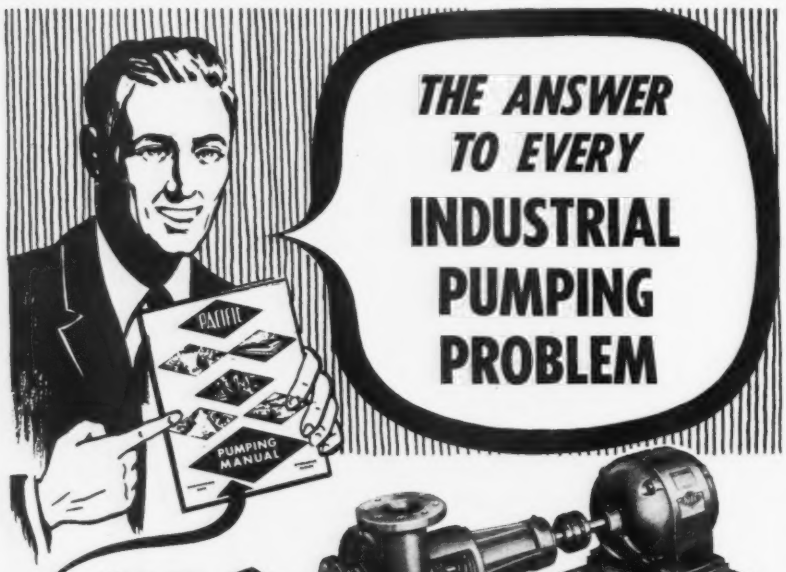
Where Water Is Available

As conditions stand at present, the delta area where Columbia Steel, Fibreboard Products, Glass Containers, Inc., and a number of other industrial plants are located, is about the only portion of the state where water is available in large quantities for industrial purposes. An exception is the north coast section where there is always a big surplus of rainfall, and there are reports of a trend toward some location there of industries requiring big water supplies.

The state has a water resources board, but its activities have been confined largely to studying irrigation and domestic supply, rather than industrial. Governor Warren is now being urged to have it undertake industrial studies.

Green Conducts Survey

A survey of industrial conditions by Carleton Green, regional economist for the Department of Commerce, shows a four per cent growth in population in northern California and Nevada for the year ending June 1, 1947, or 175,000 people. Industrial expansion for 1947 in the area totaled $152,000,000, an increase of 11 per cent in dollar outlay over 1946. Average costs, however, rose 77 per cent.



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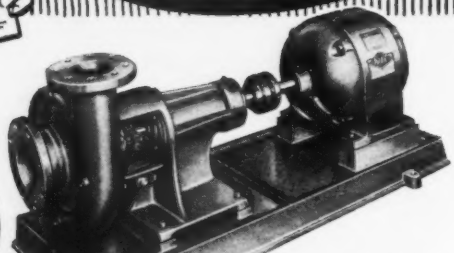

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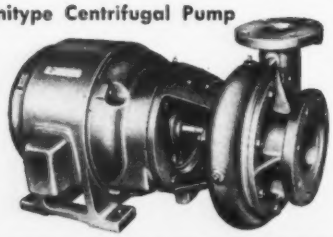

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Colorado Clearing House Benefits Manufacturers

Purpose of program is to publicize type of manufacturing facilities available to firms desirous of booking orders

COLORADO manufacturers now have the benefit of a Manufacturers Clearing House Service set up as one of the activities of the Colorado Resources Development Council, formerly known as "the Governor's Committee."

All manufacturers in the state have been sent a registration blank for listing their plant facilities, and as the returns come in the data is catalogued in a cross-reference filing system. Out of this will evolve a contract assistance program, which is calculated to be particularly helpful to young businesses and others that have come out of the shortage period and really want to book some orders. By making known to interested firms the type of manufacturing facilities available in Colorado, the Council intends to bring much added business to the state and possibly prevent some busts.

General reaction to the program of the CRDS is summed up in the comment of A. F. Barnett, chairman of the San Juan regional group:

"This is a program that should have been undertaken many years ago and we certainly appreciate the opportunity to participate."

Barnett's area is one of the untapped storehouses on the Western Slope, known to possess vast mineral wealth and probably a likely spot for much industrial development, but still handicapped by virtually no transportation and other problems that can be solved only by joint action with the rest of the state.

Construction Figures Climb

Construction continues to zoom upward in the Rocky Mountain area, with the entire area running far ahead of the national average. The Bulletin of Commerce in mid-March listed New Mexico construction as up 60 per cent, Wyoming up 55 per cent and Colorado up 31 per cent compared with a national gain of only 28 per cent, compared with 1946 figures. Arizona blew the lid off with a gain of 128 per cent, highest in the nation.

While increased construction costs account for much of the gain, the better-than-average figures for the West show clearly that the wartime drift westward is continuing in full force.

Incidentally, a wealth of useful market data is available at the regional offices of the U. S. Department of Commerce and courteous, well-trained employees seem eager to cooperate with businessmen who come in for facts and suggestions. The Denver field office at 828 - 17th street is one of the busiest places in the downtown area, but there are oodles of businessmen who haven't tumbled to the fact that this great resource is available and theirs to tap whenever they feel like it.

Western Industries Get a Lift

Many of the mountain states are beginning to feel the benefits of the far-flung program of the none-too-happily-named Midwest Research Institute of Kansas City. This organization is only three years old and came into being to meet the need for a regional institution to emphasize industrial research and to untie some of the knots that had been handicapping business expansion.

Many of MRI's successes to date have to do with agricultural problems: how to make attractive food products from sorghum, a grain-grass of the high plains country, formerly used almost entirely to feed livestock — and now a $17,000,000 plant is being built in northern Texas to do it, giving a greatly expanded cash crop for farmers of the region. A better method of recording voice and music on paper tape was worked out and another manufacturer now is doing a land-office business making tapes that talk and machines to go with them.

The Midwest institute is working with glass, with fabrics of many kinds, building products, fertilizers, new kinds of fuel, etc. Dr. Harold Vagtborg, president of the Institute, says the staff now numbers more than 100 and occupies five buildings. It serves industry at bed-rock cost, depending on the public for contributions to kick its program ahead. Many outstanding industrialists are on its board and the entire western half of America is beginning to feel the impact of its penetrating studies and imaginative suggestions.

Straws in the Wind

The staid Colorado Historical Society has turned its attention away from Indian massacres and relics of early-day wars and pioneer trails to gaze upon the industrial organizations that have made the Rocky Mountain region what it is today. Result: a series of highly readable articles about the colorful history and development of such corporations as the Mine & Smelter Supply Company, Hendrie & Bolthoff Mfg. & Supply Co., Stearns-Roger Mfg. Co., Ainsworth & Sons Instrument Co., and many other noteworthy Colorado firms.

These stories show how resourceful men came to the West in gold rush days, helped work out technology needed to develop the mining industry and then used the tricks so evolved to found businesses that sold mining equipment and other products all over the world. Then came the day when the supply business was the big thing, and many of these firms that had made their mark as manufacturers branched out as manufacturers' representatives and distributors. Now Hendrie & Bolthoff, a name known to mining men all over the world as the source of everything needed in a mine or smelter, sells victrola records by the millions along with automotive equipment and myriads of other products that are a long whoop and a holler from the mining industry that gave the firm its start.

The new president of the Denver Chamber of Commerce, Benjamin C. Essig, is a Colorado School of Mines graduate who went to work for the old Denver Rock Drill Company shortly after his graduation and returned to Denver in 1938 as manager of the huge Denver plant. Now it is one unit of the Gardner-Denver Company, manufacturers of mining and construction equipment. Essig has been active in manufacturing circles for many years and has

(Continued on page 70)

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The Continental Divide

(Continued from page 68)

been an honorary director of the Denver Chamber representing the Colorado Manufacturers Ass'n. In his new post he succeeds Robert S. McIlvaine, president of the Rainbow Bread Company, another "manufacturer" of a rather different sort.

While all the talk has been going on about the need for a wool processing industry in the mountain states, one Denver industry quietly forged ahead in a related field. The Rocky Mountain Textile Mills, headed by several of the region's top figures in the wool-growing industry, has produced millions of yards of wool yarns, both for machine-knitting and hand-knitting uses. The plant has been going for about two years now, selling its output to makers of knitted garments. Soon, however, the plant will be turning out its own socks and anklets, using their own Denver-spun yarns. To date only the highest class of wool has been processed, but as the plant expands it will handle a wider range of classifications and types of yarns. It probably is the only yarn plant in the West that does its own dyeing. Most of the yarns produced are blends of wool, angora, cashmere, nylon or silk. The plant is located at the Denver Union Stockyards, handy for its bosses, including E. A. Stephens, president, and Russell Wilkins, who also is president of Wilkins & Co., Ltd., wool buyers. As we have reported another time or so, Denver is developing a textile industry that somebody ought to notice, with dozens of firms and thousands of employees. Like so many of the industries in the mountain area, they prefer to hide because they are afraid too much national attention might bring in a lot of competition and spoil the nice dish they're cooking up for themselves these pleasant days.

More Medal-ing

Denver's pretty suburb of Littleton is getting so much of an industrial payroll it can't quite figure out what sort of town it wants to be. One of its most popular enterprises is the Heckethorn Manufacturing & Supply Company, which produces a great variety of steel products.

Now the plant is adding 100 employees to the department which turns out things like medals. The army's quartermaster corps has placed an order with Heco for 2,500,000 bronze campaign and service medals to be given U. S. soldiers and other service personnel who spent a certain length of time in the American Defense Area. In 1947 the Heco plant turned out 1,200,000 medals of various descriptions.

Extension in Aluminum Activity

Extension of aluminum fabrication activity in the Northwest is continuing. Permanente Metals has recently announced that it will manufacture aluminum siding and roofing at the Trentwood mill, and another finished product in the building field is expected to be ready for announcement within a few weeks.

Permanente also expects to have a rod and bar mill in operation at Trentwood by the middle of 1949. Installation of the aluminum foil mill, which Permanente has secured in Germany, will be made near San Jose, Calif., rather than in the Northwest as was originally contemplated.

Chromium Mining and Smelting Corp. plans to begin the production of ferro-alloys in May at the former magnesium reduction plant near Spokane. Chromite ore imported from New Caledonia, India, or South Africa will be processed at the rate of about 1,000 tons per month per furnace with four furnaces available but the power supply still doubtful.

Western Steel Capacity Gains 203%

California now is in tenth place among America's steel producing states, its production capacity increasing 101.1 per cent since January, 1942. Utah, from negligible capacity in 1942, rose to eleventh place. Capacity of California, Utah, Oregon and Washington increased 203 per cent—from 1,242,320 net tons in January, 1942, to 3,769,400 in 1948.

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(See article on pages 50-51)

All of the Ore

LIKE the Chicago packing houses that have become famous for using "all of the hog but the squeal," a $500,000 500-ton flotation mill is being promoted to utilize the majority of the ores mined in Clear Creek, Gilpin and Boulder counties in Colorado.

For years the mining industry has been throwing away more than half its products, in contrast to other industries that use nearly everything, according to Douglas V. Watrous, Denver mining engineer. His proposed solution of the problem is a thorough metallurgical research program on all the ores to be found in one district, and then the construction of a centrally located mill to handle a majority of the ores.

At present, he points out, miners pay a heavy freight rate to transport ore to a distant buyer who will only use part of the metals, or else they lose money trying to operate small mills at their own mines.

The proposed plant is to be known as the Custom Mountain Empire Mill, and Watrous is president of Mountain Empire Mills, Inc., the company organized to operate the mill.

Mr. Watrous' outline of the possibilities is as follows:

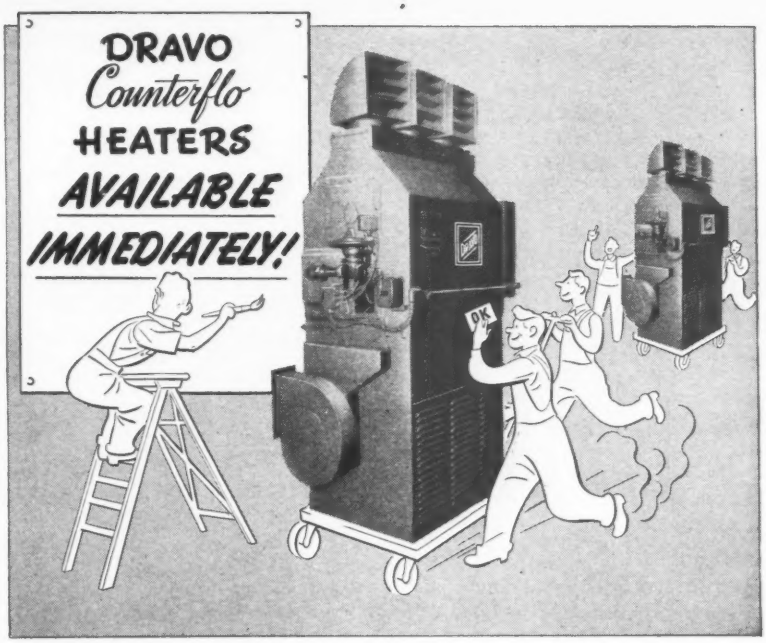
Most of the gold and silver could be sold directly to the mint. This would eliminate two middle men (the smelter and the refiner), and thereby increase the price received by the miner. The lead, zinc, and copper concentrates can be sold to the appropriate smelters. Under this plan the concentrates command a premium because of their high grade. The iron can be sold, too. Chemical plants offer a market for this product.

Such a mill can produce and sell a 70 to 75 per cent lead concentrate instead of the low-priced 35 per cent concentrate now produced. The zinc concentrate would run 60 per cent and the miner would not be shipping a low-priced 40 per cent concentrate as he is now; nor would he be penalized for a mixed concentrate. A 40 per cent copper concentrate would result, and obviously it would be much more valuable than the present 3 or 4 per cent concentrate.

With these improved concentrates returns can almost be doubled. Miners would be paid for a larger number of metals in the ore. Savings on freight ($3.50 to $5 a ton) and treatment charges will be important, because the miners would not be paying on useless material.

Mr. Watrous asserts that when his ore reserves are low, the miner will not have to blast in his walls to keep a mill running. Also, that there will be more prospectors in the hills because they will have a place to sell their ore at a fair profit.

Many additional mines will be opened he says. These mines will have a greater margin of profit and will be able to pay dividends.



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Mine-Mouth Utilization Solution For Coos Bay Coal

Despite small reserve at Coos Bay, problems of quality mining and transportation are similar throughout region.

PACIFIC NORTHWEST — Mine mouth utilization of Northwest subbituminous coals was emphasized and re-emphasized as the ultimate solution most likely to succeed in the development of Btu from the potential resources of the area. This summarizes the symposium on utilization of Coos Bay, Ore., coals held early in March at Eugene, Ore., under the sponsorship of the Raw Materials Survey, Inc.

The question of utilization of Coos Bay coals in itself is a local problem and relatively unimportant in comparison to the utilization of Northwest coals generally, since the Coos Bay deposits represent less than one per cent of the total known coal reserves of the region. However, the problem of utilization of any portion of the Northwest coal reserves can hardly be separated from that of the whole. Quality of the fuel, difficulties in mining and transportation, are quite similar throughout the region with the exception of a few limited high grade deposits.

Coos Bay coal is the most important fuel resource of central Oregon. Exploration tests by the U. S. Bureau of Mines have indicated that about 17,000,000 tons lie in the 1,020-acre Beaverhead field. The Btu content runs slightly under 1,000 per pound in the untreated state and from 1,100 to 1,200 per pound of dry weight. Samples from 13,000 feet of exploratory holes indicate that the deposit contains very little material of intermediate density which would simplify the washing operation.

The principal handicap which has effectively deterred exploitation of the resource on any large scale is the high cost of transporting the Coos Bay coal to any large scale user beyond the immediate area of the deposit. As an example of this, it was pointed out that during the war transportation costs on fuel sold to a government agency at Klamath Falls, Ore., only 260 miles away, were higher than the cost of mining the coal.

At least one speaker during the course of the meeting accused the railroad companies of dumping Wyoming and Utah coal in the Willamette Valley as a means of discouraging the use of Coos Bay coal. Such activity probably is not outside the realm of possibility, since the revenue accruing to a carrier for a haul of more than 700 miles would be appreciably greater than that from hauls of only 50 to 250 miles. On the other hand no great market has so far been developed for the local product; not even large users in Portland have shown any great interest in accepting Oregon coal as a standard fuel.

Reduce Transportation Costs

An interesting point to contemplate is that mine mouth utilization, if and when it can be developed, will effectively eliminate any possibility of revenue accruing to the carriers from this source. Another means of reducing the high cost of transportation, aside from mine mouth utilization, might be barge transportation up the Coast from Coos Bay and up the Columbia River to Portland. In order to secure advantageous bulk rates it is estimated that a minimum movement of 1,700 tons per week would be required.

This large market might be developed in several ways, but in general it would necessitate the pooling of a number of orders from steady users. It would also require the conversion of fuel burning facilities by a number of plants consuming large quantities of fuel. The chief obstacle, which has not as yet been overcome to any degree at all, is persuading major consumers to contract for a fuel supply on a long time basis in order to establish an economic basis of operation.

In commenting on this particular point, Dean George Gleason of the School of Engineering, Oregon State College, recommended a study of industrial consumers and the possibility of pooling resources to aid in the development. Dean Gleason added that in the past a lack of venture mindedness in Oregon has definitely hindered the development of the Coos Bay coal deposits.

Some of the difficulties in the way of normal utilization of Coos Bay coal were well outlined by a representative of the Eugene water board which is planning the installation of a new steam turbine for the generation of electric power. Boilers feeding the turbine have been designed to use any one of three fuels, Coos Bay coal, sawdust, or fuel oil.

A recent study of fuel costs has shown that if the value of sawdust as a fuel for steam generation is taken as unity, the relative value of Coos Bay coal runs from 2.6 to 2.9 which would rank it in third place economically. Utah coal on the same basis has a relative value of 2.4 to 2.5 just slightly under Coos Bay coal, while fuel oil rates last with a relative value of 3.0.

Hog Fuel

There was some talk of hog fuel and its position in the fuel field. At present Eugene is generally considered to be the center of the lumbering industry of the Pacific Northwest, and quite naturally there is a plentiful supply of hog fuel available in the vicinity. Similar conditions exist to a lesser degree in other parts of the Northwest.

It was generally conceded, however, that this situation would not remain true indefinitely. As waste wood utilization develops along such lines as fiber board, carbonization, and alcohol production the resultant price increase will be certain to discourage the use of wood waste as a fuel. Already the available quantity of hog fuel is decreasing due to the development and adoption of such modern devices as the hydraulic debarker.

(Continued on page 74)

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Coos Bay Coal

(Continued from page 72)

PORTLAND — February industrial growth here totaled 13 new industries which commenced operations during the month. All but one were small local organizations reflecting a sound basic industrial growth for the area.

Employment in the three counties surrounding Portland, including Multnomah, was at a higher point in February of this year than at the corresponding time in 1947 or 1946. Employment in the district early in March was estimated to be more than 51 per cent above that for March, 1940. The outlook for coming months is a steady increase through the spring, summer and early fall.

California Asphalt Corp., which opened a new $1,000,000 paving asphalt refinery here a year ago, is now planning to add a wide variety of air-blown asphalts to its production in an expansion of processing facilities.

Some of the other handicaps to the development of the Coos Bay coal field were listed as the difficulty which has been experienced in de-ashing the coal to produce an industrial carbon; state laws governing the sale of securities; and the lack of financial resources to permit the development of more efficient mining methods. The one definite proposal which came out of the meeting (although no action was taken to implement the suggestion) was that an electric generating plant be established in the immediate vicinity of the mine mouth.

Comparative studies indicate that for such a plant pulverized coal could provide electrical energy at a cost of $0.00378 per kilowatt, considering steam generation with 80 per cent efficiency of boilers, 13,800-kilowatt generators, and coal at $5 per net ton. Under these conditions the cost of generation using oil as a fuel at present prices would be nearly a third greater, being estimated at $0.00483 per kilowatt.

Gasification of Coos Bay coal in place was discussed rather generally, but in terms of what has previously been done in other locations. Dr. Warren D. Smith, consulting geologist of Eugene, reported that coal similar to Coos Bay has been successfully gasified in the Philippine Islands, where for a number of years an electrical generator has been operated by a direct-connected gas engine fed by gas generated from coal.

He suggested that a cooperative program might be arranged for research into the possibilities of a similar project for the Coos Bay deposits. Such a program would require selection of a suitable site, blocking out of a unit, sinking pipes of shafts, and installations for the storing of gas and generation of power.

Another meeting that should prove of considerable interest to many Northwest industrialists is scheduled for May 8 at the Multnomah Hotel in Portland. Planned as the first of a series of annual regional conferences, the Northwest industrial nonmetallic minerals conference is being sponsored primarily by the Oregon, Washington, and Idaho sections of the American Institute of Mining & Metallurgical Engineers.

Sponsoring the first conference jointly with the A.I.M.E. is the Oregon State Department of Geology and Mineral Industries, the Portland Chamber of Commerce, and the Raw Materials Survey, Inc. Future meetings of the conference will be rotated between Seattle, Spokane and Portland.

The announced program for the conference includes eight 20-minute papers, and luncheon and dinner addresses. Subjects for the eight papers are listed as industrial mineral flotation, industrial minerals research, mineral wool, sand-lime brick, refractories, perlite, industrial mineral sales, and Steilacoom gravels. Both the luncheon and dinner addresses will emphasize Western industrial development with the noon meeting devoted to growth of the mineral industry, and the evening meeting devoted to power and fuel developments in the Northwest.

SPOKANE — Contracts for machinery for the rod and bar mill to be installed at the aluminum rolling mill operated by Permanente Metals Corp., have been let. Production from the new plant, which is expected to be in operation by April of next year, is estimated to be about 120,000,000 lbs. per year.

A permanent organization for the wood products clinic which was held here for the third successive year during April has been proposed by Dr. Eri B. Parker, director of the division of industrial services at Washington State College. The clinic is sponsored jointly by the college and the timber products bureau of the Spokane Chamber of Commerce.

Lehigh Portland Cement Co. will double the capacity of its Metaline Falls, Wash., plant, bringing it up to 4,000 barrels of cement per day.

SEATTLE — February industrial expansion here accounted for the establishment of eight new plants in the metropolitan area at a capital expenditure of $146,500 and the generation of 54 new employment opportunities. Ten established plants spent some $2,384,000 in the expansion of existing facilities, and five plants replaced old facilities with new at a cost of $611,000.

The new industry (established during January) of which the Seattle Chamber of Commerce is the proudest is probably the Ryan Recording Thermometer Co., which manufactures a thermometer for automatic recording of railway refrigerator cars in transit. Ryan moved its plant from Los Angeles to Seattle.

Seasonal unemployment apparently reached its peak here in February with job applicants increasing by about 8,000 in King County during the month. A gradual increase in employment has been in evidence during the last half of March.

A campaign of promotion aimed at securing a permanent rail transportation link between the Pacific Northwest and Alaska through British Columbia was opened in March by several committees of the Seattle Chamber of Commerce. Studies to date have indicated that the project could not be economically feasible as a strictly commercial venture at the present stage of development, but national defense considerations are being stressed as an important balancing factor.

Preliminary plans and estimates indicate that construction of the main line from Vancouver, B. C., to Fairbanks, Alaska, would cost about $425,000,000, of which private capital could be expected to invest about 47 per cent and the remainder would have to be government financed. This estimate of construction cost is based on 1,539 miles of main line plus new rails and some realignment of the Pacific Great Eastern railroad which now extends over some 347 miles of the proposed route.

Location of the proposed railroad requires construction of a link from Vancouver to Howe Sound, where a connection would be made with the Pacific Great Eastern at its southern terminus. From Quesnel, the northern terminus of the PGE, the line would follow the Fraser River to Prince George where it would cross the Canadian National Railway line from Edmonton to Prince Rupert. Continuing north through Sifton Pass to Watson Lake, the line would cross the Alcan highway, continue to Pelly Pass and down the Pelly River to a crossing 175 miles from White Horse, and on to Fairbanks where a junction with the Alaska Railroad to Anchorage could be made.

TACOMA — Chicago, Milwaukee, St. Paul & Pacific railroad began its first car manufacturing program at the local shops since 1925. During the next 12 months the car shop will turn out about 300 new logging flat cars in addition to repairing an average of 530 cars per month.

The first all-welded aluminum alloy hull to be used on a pleasure cruiser will be placed in production soon by the pleasure craft division of the Pacific Boatbuilding Co. and the Puget Sound Boat Building Corp. Three models, all using the same 23-ft. hull, will be mass produced under a program which will require the addition of some $500,000 in new plant equipment and materials.

A number of branch lines are also proposed of which the most important would probably be a 350-mile line running northeasterly to Norman from the Pelly River Crossing. At Norman in Yukon Territory the Imperial Oil Co. has completed 63 oil wells with a known reserve of 35,000,000 barrels which is being held for future needs.

At Norman a connection would also be made with the Mackenzie River, Great Bear Lake, Great Slave Lake and Slave and Athabasca River inland navigation systems. The Pelly River crossing would also be the junction for a branch extending southwesterly to White Horse, which is the inland terminus of the White Pass and Yukon railroad extending from Skagway on the southern coast of Alaska.

Cost of these two principal branches is estimated to be an additional $125,000,000 which would be included in the government-financed portion of the program. Supplying the entire system with rolling stock is estimated to cost $125,000,000 and is placed in the privately financed portion of the program. The proposal for development of the Canadian Alaska railway suggests that about a half of the total required investment ($675 - 725,000,000) be borne jointly by the governments of the United States and Canada in a proportion of roughly 2½ to 1, and that financing of the Canadian portion might be accomplished with the assistance of the Export-Import Bank, if necessary.

Savings to the governments in freight costs which would accrue by shipment of the present annual tonnage overland rather than by the combination of steamship and railroad at present is estimated to be about equal to one-sixth of the required governmental investment for construction of the road. Reliability of deliveries could be improved by about 80 per cent by substitut-

(Continued on page 77)

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New Copper Refinery Boon For Utah

Pacific Coast's demand for copper results in plans for Kennecott refinery; means new era in non-ferrous metals.

SALT LAKE CITY — Announcement by Kennecott Copper Corp. of plans to build a copper refinery on the south shore of Great Salt Lake during the current year carried far more significance for this area than just another industrial plant. It, in fact, heralded a new era in the non-ferrous metal industry, a phase which Utah has been impatiently awaiting for half a century.

Since the turn of the century, and before, a favorite gripe of politicians and local businessmen has been the exportation of this area's metal production for refining. Economic theorists have attributed the region's industrial payroll poverty to the lack of metal refining and fabricating plants. And the "big interests" have been roundly denounced, particularly by aspiring politicians, for a "plot" to use the state's natural resources for building up other sections of the country.

Actually, of course, the refining industry by-passed the state because of hard economic facts. Those economic facts are now changing and the intermountain region can reasonably expect to reap more benefits from its natural resources than it has in the past.

The Kennecott project serves to re-emphasize the interdependence of the intermountain West and the Pacific Coast. For Utah gets its copper refinery at long last, not because of anything that has happened here but because of what has happened on the Pacific Coast. As Kennecott officials pointed out, the project was brought about by a constantly growing demand for refined copper on the Pacific Coast and in regions of the midwest which can be economically supplied from this section.

Availability of refined copper here, it can reasonably be assumed, will encourage the movement of a larger share of the fabricating industry westward.

Kennecott's announcement did not disclose where electric power would be obtained for the electrolytic refining process. But presumably the new 100,000-kilowatt plant recently completed by the company will supply all or a large part of the refinery power requirements.

The plant will have an initial capacity of 12,000 tons of refined copper monthly, which is more than half of the present output of Kennecott's Utah division. It will be Kennecott's first refinery in the United States. The blister copper from the Bingham operations is now sent to Baltimore, Md., Perth Amboy, N. J., and Tacoma, Wash., for refining.

Water Supply Normal

Thanks to abnormally heavy precipitation during March, Utah's water supply prospects are now about up to normal—much to the relief of farmers and the electrical power industry. Unlike many parts of the country, this area has been one jump ahead instead of a jump behind the soaring demand for power. And at no time during the war or post-war booms has there been a shortage, although the margin of safety has been disturbingly thin at times, and still is.

Three main factors have kept the state on the comfortable side so far as electric power is concerned. One is the additional capacity provided by Utah Power & Light Co. through new construction and by interconnection with the Northwest Power Pool (Washington, Oregon, Idaho, Montana, Utah and small segments of Nevada and Wyoming). Another is the 50,000-kilowatt plant of Geneva Steel Co.'s, which has provided a substantial surplus to Utah Power & Light. The third is the 100,000-kilowatt plant built by Kennecott Copper Corp. This served to take a big load off the power company, and it will probably be able to supply some power to Utah Power & Light, at least until the company's projected copper refinery gets into operation.

The one major impediment to public utilization of excess capacity of industrial plants was removed by the special session of the legislature during the first half of March. A close interpretation of the state's public utilities act would have required that industrial firms selling power to a utility be classed as a utility and brought under the regulatory powers of the commission.

Neither Geneva or Kennecott relished the idea of making their surplus power available to the public at a cost of possible involvement in the regulations of the public utilities commission. As a consequence the act was amended to permit such industrial firms to sell power to distributors without subjecting themselves to regulation. The contracts, of course, are subject to approval by the commission.

While the area has escaped power shortages thus far, it is not entirely out of the woods. Demand is still on the rising side and a short water supply, or serious accidents to a major generating unit, quickly pull supply below the demand line. Utah Power & Light Co.'s present expansion program calls for a new 75,000-kilowatt coal plant but it cannot be constructed until 1949 or put into service until 1950. George M. Gadsby, president of the utility, sizes the outlook up in this manner:

"The reserve capacity is not now as much as was customary before the war and this reserve would be greater were it possible to get deliveries on generating equipment on a pre-war schedule. It is my belief, however, that granted average precipitation, no serious accidents to major generating units, and no return of government priorities, the electric power supply will be adequate for every requirement of the immediate future.

In addition to the farmers and power people, the March snowstorms brought sighs of relief to officials of the Salt Lake City water department. Consumption has soared almost 50 per cent since 1941. And a return of a dry cycle, such as was expe-

(Continued on page 78)

Coos Bay Coal

(Continued from page 75)

ing rail transportation for water transportation, which would change the labor picture entirely and alleviate the losses of goods and time due to weather conditions.

Aside from the question of national defense, the rail line is considered to be the only practical means by which the interior of northwestern Canada and Alaska can be effectively developed. If construction could begin in 1948 and be completed by the end of 1950, it is estimated that the volume of freight, independent of present government tonnage, would be doubled.

A much smaller, more localized, and equally more immediate problem in transportation, that of service across Puget Sound from Seattle to Bremerton, Wash., and other Olympic Peninsula points, has been temporarily solved. As reported in this column last month the Puget Sound Navigation Co. ceased operations on March 1, in a dispute with the state of Washington over rates and methods of bookkeeping.

Counties on the east and west shores of the Sound, principally King and Kitsap, took over operation of the ferries in name while turning over the actual management of the system to the company under contract agreements. This arrangement permitted resumption of nearly normal ferry service across the Sound on March 9, avoided the necessity of operating under state supervision since the counties are operators of title, and permitted the company to raise its rates, not only the 30 per cent which had previously been disallowed by the state, but another 30 per cent in addition.

More Apprentices

Indicating the progress made by the Joint Apprenticeship Committee for the Masonry Industry of Alameda and Contra Costa Counties, and similar efforts throughout California, latest recapitulations show that there are 463 bricklayer apprentices holding membership in local unions of the state. Previously reported total was 280 apprentices, according to Thomas W. Cole, secretary of Bricklayers' Local No. 8 of Oakland, Calif., employee sponsor within the Joint Apprenticeship Committee.

Among recent activities undertaken to encourage an increase of apprentices was a well-attended management-labor discussion and inspection meeting staged at the Kraftile Company, Niles, Calif., manufacturers of structural clay products.

Utilize Pear Waste

Pear canning waste will be converted into a livestock feed yeast by the Olympia Canning Co., Olympia, Wash., by a newly developed process of continuous fermentation of press juice. About 96,000 tons of waste can be converted into 5,760 tons of dry yeast each year, it is estimated.

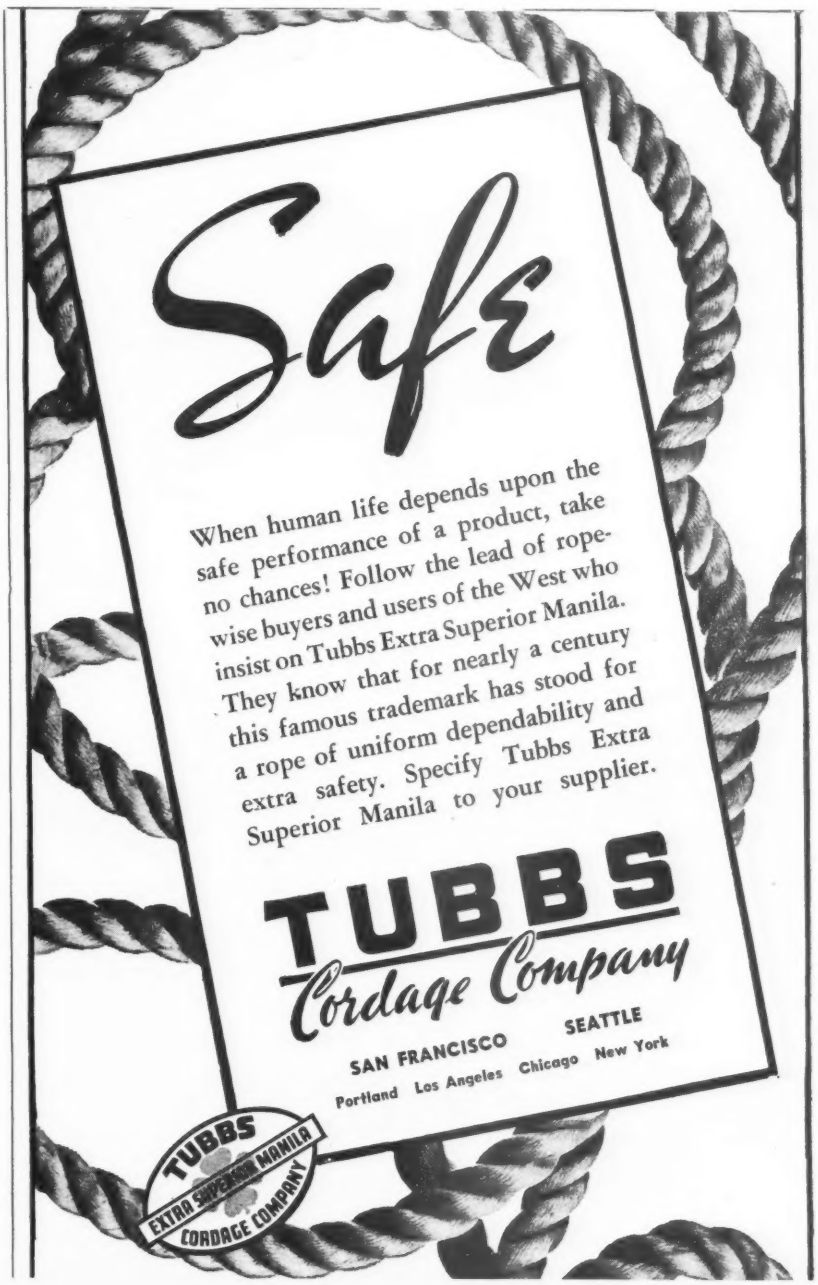
Basic Magnesium Deal Finally Goes Over

The long pending deal by which the Basic Magnesium plant at Henderson, Nevada, becomes the property of the state of Nevada has finally been approved by the War Assets Administration.

Acting through its Colorado River Commission, Nevada will pay $1 upon transfer of the property and will turn over to the federal government all net revenues until the full purchase price of $24,000,000 is paid. Original cost of the huge war plant was $140,000,000, which has been sold for 96.05 per cent of the present appraised fair value of $24,987,000.

Total annual rentals being paid by the various chemical concerns occupying the plant are approximately $1,650,000. Largest among the chemical operations is that of Stauffer Chemical Co., while other tenants include New York-Ohio Chemical Co., Hardesty Chemical Co., Montrose Chemical Co., U. S. Vanadium Corp., Nevada Clay Products Co., Coulter-Harden Co. Mineral Materials Co., Western Mineral & Development Co.

The Colorado River Commission proposes to install generators at nearby Boulder Dam from which electricity will be supplied at a rate permitting profitable operation of electro-chemical establishments.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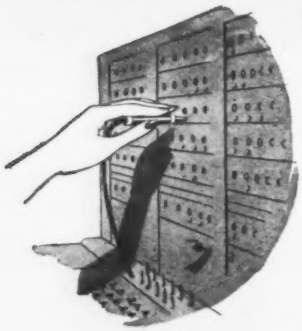

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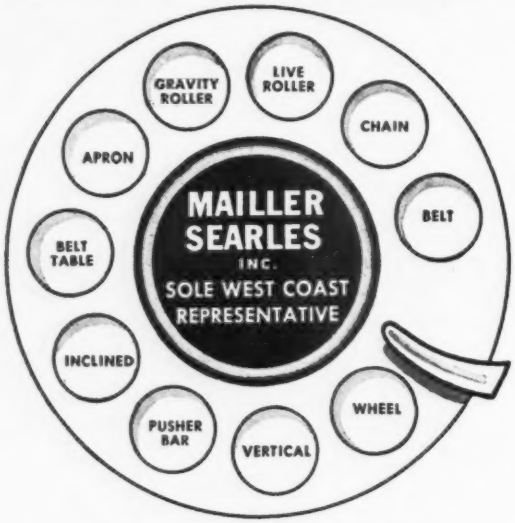

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Copper Refinery

(Continued from page 76)

rienced in the early thirties, would not be disastrous rather than mildly discomforting. The city will continue to be in a precarious water supply position until the aqueduct from Deer Creek reservoir is completed, which will probably not be until 1950.

Gus P. Backman, executive secretary of the Salt Lake Chamber of Commerce, is optimistically expecting 3,500,000 tourists to visit the state during 1948. This was the record number racked up in 1947, the centennial year. And Backman believes that conventions, mostly banned in 1947 because of lack of accommodations, will bring the 1948 total up to the centennial mark. His one qualification: "If present economic conditions continue."

Tehachapi to Tijuana

(Continued from page 62)

investment now is entering the housing field. Metropolitan Life Insurance Company, for instance, shortly will start construction of 18 apartment buildings, each the legal limit-height of 13 stories, at a cost of $30,000,000.

Local Chamber of Commerce bigwigs recently indulged in a bit of good-natured transcontinental jousting with Philadelphia civic boosters about whose home town outranks whose in size. Later the hatchet was buried when the eastern chamber president came West bearing gifts — Quaker City-made hats and television equipment for local native sons, who countered by proffering Los Angeles-produced leather luggage, champagne, and a lively sports costume, including suede coat and slacks.

By-product of the incident was the significant comment by the visiting Philadelphian that his own company, Gimbel's, of which he is a director, already is buying some $3,000,000 worth of merchandise each year in the Los Angeles area.

Southern California boosters want enough water to permit 10,000,000 people ultimately to occupy the southwestern coastal plain. They are opposing the Central Arizona project, a proposed $700,000,000 irrigation development which would require substantial quantities of Colorado River water. California-sponsored legislation has been introduced in the Senate to have the Supreme Court settle the issue of who-gets-how-much-water.

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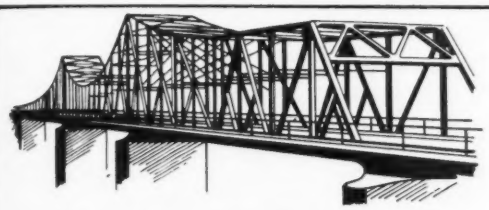
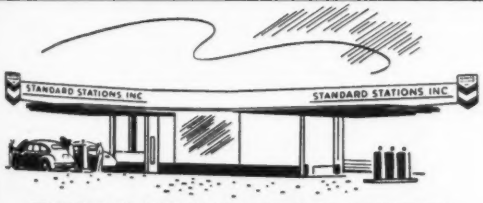


HIGHWAY AND RAILROAD GIRDER AND TRUSS BRIDGES



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Portal Act Clinics Will Answer Questions

IN AN effort to educate employers as to what the portal-to-portal act actually involves, a series of clinics are being conducted in the seven Western states by the Wage and Hours and Public Contracts Divisions of the U. S. Department of Labor.

Under the tutelage of the various local regional directors and regional attorneys, clinics have been conducted in Fresno, California, and Phoenix, Arizona, according to A. S. Hall, field representative from the San Francisco office. They are proving highly successful in clearing up many confusing issues which have arisen since the inception of the act in May of 1947. With 1,900 suits filed involving $6,000,000,000 over a period of six months, it is imperative that employers realize just where they stand.

For example, if a firm does not pay "get ready" time, has never paid it, and it is not mentioned in their union contract, then an employee can not file suit against the company. But, if it has been the policy of the company to pay "preliminary" and "post-liminary" activities without mention of this in their union contract, then he is liable to continue doing so. The act reads that a company must pay for this "preliminary" and "post-liminary" time if in the past they have been "doing so by contract, custom or practice."

To illustrate the terms "preliminary" and "post-liminary," the clinic cites an example of a worker whose hours start at 7:30 a.m., but who clocks in at 7:15 to change into work clothes, clean tools, adjust machines, or even to account for a

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1/16" - 1 x 19	Galvanized	500 Lbs.	251,605 Ft.	In Stock	.020 Ft.	.008 Ft.	.006 Ft.	
3/32" - 7 x 7	Galvanized	920 Lbs.	8,288,215 Ft.	In Stock	.042 Ft.	.0168 Ft.	.0126 Ft.	.01 Ft.
3/32" - 7 x 7	Tinned	920 Lbs.	348,331 Ft.	In Stock	.042 Ft.	.0168 Ft.	.0126 Ft.	.01 Ft.
1/8" - 7 x 19	Galvanized	2,000 Lbs.	10,500 Ft.	In Stock	.085 Ft.	.034 Ft.		
5/32" - 7 x 19	Tinned	2,800 Lbs.	200,037 Ft.	In Stock	.092 Ft.	.037 Ft.	.0276 Ft.	
5/32" - 7 x 7	Galvanized	2,600 Lbs.	406,040 Ft.	In Stock	.056 Ft.	.0224 Ft.	.0168 Ft.	
3/16" - 7 x 19	Galvanized	4,200 Lbs.	1,004,280 Ft.	In Stock	.104 Ft.	.04 Ft.	.035 Ft.	.03 Ft.
7/32" - 7 x 7	Galvanized	4,600 Lbs.	1,427,329 Ft.	In Stock	.075 Ft.	.03 Ft.	.025 Ft.	.02 Ft.
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long walk from the gate to the plant. These activities are termed "preliminary." At the close of the working day, the employee clocks out 10 or 15 minutes later, and is paid for this time which is used in changing clothes, arranging tools or machine and once more taking his jaunt to the gate. These are his "post-liminary" activities.

The act actually defines just what travel time and make ready time is to be, and the clinics are conducted so that many individual cases can be discussed and the act thoroughly explained to employers.

Clinics will be conducted in the Northwestern states very soon, said Mr. Hall, and then on to Idaho, Montana, and Utah. Employers in these states have also been flooded with back wage suits, and the need for the clinics' clarification of the act is urgent.

Overtime Decision For R.R. Employees in Oil Fields

Ruling in Keele v. Union Pacific Railroad, the U. S. District Court for the Southern District of California recently held that the overtime provisions of the Fair Labor Standards Act do not apply to electricians employed in a railroad's oil fields. The court held that they were exempt under the clause of the Act which exempts "any employee of an employer subject to the provisions of Part I of the Interstate Commerce Act."

R.R. Picketing Enjoined By Supreme Court

The California Supreme Court on February 5, in a case arising from the redwood lumber strike, ruled that pickets may not interfere with railroad transportation for the purpose of preventing railway employees from handling freight to or from a struck plant. The court pointed out that the railroad, as a common carrier, was obliged to accept freight from all customers without discrimination.

Few Work Stoppages

The California Bureau of Labor Statistics, January issue, has this to say:

"Work stoppages, due to labor-management disputes, declined to a new postwar low in December, 1947. Preliminary estimates indicate: 3,600 work stoppages in 1947, 4,985 in 1946; 2,200,000 workers involved in 1947, 4,600,000 in 1946; 35,000,000 man days in 1947, 116,000,000 in 1946."

Cannery Council Accuses NLRB

The regional NLRB has been charged by Hal Angus, secretary of the AFL Cannery Council, with "hand in hand collusion with officials of the CIO Food, Tobacco & Agricultural Workers Union and their known Communist agents."

Gerald Brown, regional NLRB director, denied the charges and said NLRB agents have been carrying out their assignments by interviewing cannery employees involved in a back-pay dispute and were showing no prejudice for either labor organization.

The dispute started when Mr. Brown wrote the AFL council his office was informed AFL representatives in Stockton and Sacramento had advised cannery workers against filing certain NLRB questionnaires or "they would lose their jobs."

Mr. Brown's charges were denied as "unfounded" by Mr. Angus and Mathew Tobriner, attorney for the Cannery Council. For several years the AFL and FTA have been involved in a fight for jurisdiction over 50,000 northern California workers.

Labor Act Works, NAM Man Says

The Taft-Hartley Labor Act today has successfully met "the test of application," an official of the National Association of Manufacturers says.

Carroll E. French, industrial relations director, told 150 delegates from 25 states to the NAM's industrial relations conference in Chandler, Oregon, that the new law "is promoting cooperative relations between management and labor."

French urged better training of executives, purging company policies and practices of "discrimination," stabilizing work and pay, promoting employee security and welfare, and more non-financial incentives.

New Tool Inserts Rubber Grommets Quickly . . . Easily!

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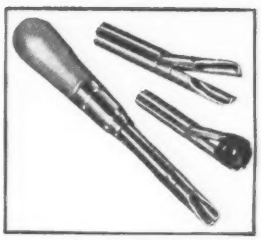

Grommet Inserter

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Mexico, D. F.
Panama, Panama

THE WEST ON ITS WAY

ARIZONA

TOMATO CANNING PLANT—Construction of the first tomato canning plant in Arizona will start shortly in Elfrida. It will be built by L. R. Downey, and will require about 40 employees.

TWO-WAY RADIO USED IN SERVICE CARS—The Central Arizona Light and Power Company, Phoenix, has installed two-way frequency modulation equipment in eight of its mobile units. Utility company officials hope eventually to be able to blanket their entire service area in the state with radio communications, which will require additional power stations.

CALIFORNIA

NEW SHIP REPAIR YARD — California Ship Repair Corporation, Oakland, has started operation at the foot of Washington Street on property leased from the Port of Oakland. The new organization is located in an area that was formerly the Graham Shipyard; at the present time it has $120,000 worth of contracts for landing craft repair.

COCA-COLA WILL BUILD—Coca-Cola Bottling Company of California will build a new bottling plant and warehouse at Pittsburg. The plant will provide 15,000 sq. ft. of space.

PLATING COMPANY EXPANDS—Liberty Plating Co., 525 North LaBrea, Los Angeles, is erecting a 15,000 sq. ft. plant at 5737 West Jefferson Blvd., where it will increase production of electroplating.

NEW BUILDING INCREASES MANUFACTURE—Hugh Robinson & Sons, 1130 East 108th Street, Los Angeles, has moved into its new building of about 4,500 sq. ft. for increased manufacture of shell and tube condensers and coolers, pipe coils, and evaporative condensers.

EFFICIENT, ECONOMICAL

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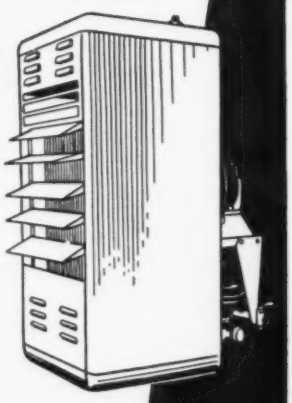

A. G. A. approved for all types of gases.

FEATURES: 33 sq. ft. of heating surface in the 125,000 BTU model. New type burner gives maximum efficiency — is adjustable and replaceable. Heat exchanger is specially rolled of heat-resistant steel. New Basoid valve with line voltage Solenoid and 100% safety shutoff. Wall type Minneapolis-Honeywell thermostat. Powerful, silent fan has 16" blades. Case is 24-25 gauge Paintlock enameled steel.

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Write or wire for literature and prices.

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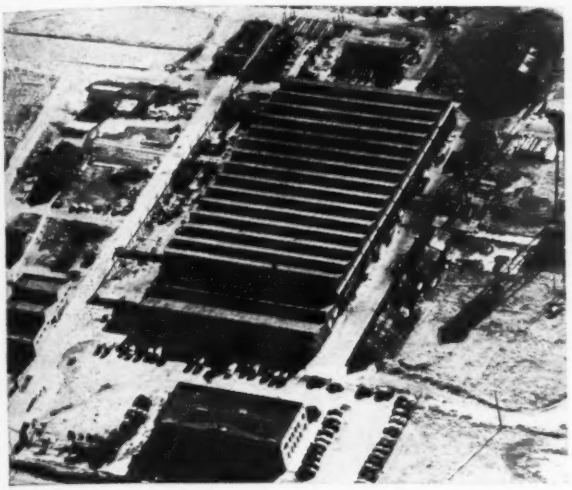
ARMY PLANE CONTRACT—Northrop Aircraft, Inc., of Los Angeles has been awarded a $5,500,000 U. S. Army Air Force contract for 23 assault transport planes. Production of the new plane, to be known as the Northrop Raider, is expected to begin immediately. Thirteen of the new planes will be tested as light assault transports in the establishment of "air heads." The other 10 will be used for Arctic rescue operations and will be equipped with a ski landing gear.

TORRANCE PLANT SOLD — National Electric Products Corp. of Ambridge, Pa., have purchased the Joshua Hendy Iron Works plant at Torrance. They will equip the plant for manufacture of flexible electrical conduit, tubing and electrical fittings. Several hundred persons



will be employed. The principal manufacturing building on the 27-acre site is a 360x180-ft., one-story concrete and steel structure with 65,000 sq. ft. of floor area. Other buildings include a welding and fabricating shop, carpenter shop, cafeteria, garage and structures housing compressors, boilers and oil storage.

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AIRMOVER is made in units which "add together" to make runs as long as necessary. Parallel runs make possible practically total roof coverage. Ventilator is only 32" high—doesn't add unmanageable weight to your roof.

Swartwout Ject-O-Valve does a real job *where power ventilation is needed*

Over vats, furnaces and other *concentrated* heat spots you can profitably use this powerful "straight-through" powered Ject-O-Valve. Made in sizes and capacities to fit your need.

Swartwout new catalog describes full line of gravity and power roof ventilators. Ask for Bulletin 324.

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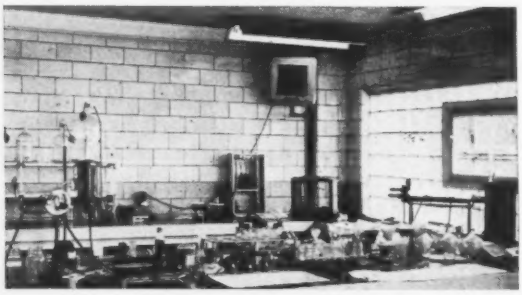

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Wherever low-cost walls or partitions are needed in *your* factory, laboratory or office, specify KRAFTILE Glazed Wall Units. They're "job-tested", with years of satisfactory service in the West's leading food, chemical and general industrial plants. Full information is yours for the asking . . . write or wire:

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THE WEST ON ITS WAY

CAMP PENDLETON TO BE PERMANENT—The U. S. Marine Corps has announced a five-year, $127,000,000 construction program for Camp Pendleton, near Oceanside, which would convert this training center into a permanent establishment.

CHERRY RIVET PLANT EXPANDS—Cherry Rivet Company of Los Angeles have purchased and equipped an additional plant for the manufacture of hand and automatic guns. The new building is located on an adjacent plot to the present facilities and general offices at 231 Winston Street; it has a floor area of some 14,000 sq. ft.

SAN LEANDRO PLANT EXPANDS—The Friden Calculating Machine Company, Inc., San Leandro, has completed a $1,000,000 expansion and modernization program. In the newly enlarged plant, more than five acres of floor space are devoted to automatic calculator production.

FIBREBOARD BUILDING MILL—Fibreboard Productions, Inc., expects its kraft pulp and paper mill at Antioch to go into production shortly. The plant, together with 82,000 acres of timberland purchased last year to provide a perpetual supply of pulpwood under a reforestration plan, represents an $18,000,000 investment.

BALING WASTE PAPER OPERATION — The Independent Paper Stock Company of San Francisco has started a baling waste paper operation on South Lincoln Street in Stockton. The new plant covers 7,500 sq. ft. of floor space and will bale waste paper for the Stockton plant of Fibreboard Products, Inc.

ENVELOPE FIRM EXPANDS—The Mail-Well Envelope Company of California has established a Southern California branch with headquarters in Los Angeles. The firm will maintain warehouse stocks in Los Angeles, and plans to go into operation in the new plant shortly. Ed Hinkley of Portland will be the manager.

HARDWARE FIRM ADDS TO PLANT—Weiser Company, 8635 Otis Street, South Gate, is adding 5,000 sq. ft. to manufacturing facilities for builders' hardware, brass and bronze castings.

ROYAL METAL EXPANDS—Royal Metal Company have purchased the business and facilities of the Hudson Beauty Shop Equipment Corp., Los Angeles. The new plant will produce the entire Royalchrome line.

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5-28

FIRM MOVES TO NEW BUILDING—Gear Engineering & Manufacturing Company, 2826 Norton Avenue, Lynwood, has moved into the plant at this address where more than 3,000 sq. ft. are utilized in manufacture of shafts, sprockets, etc.

LUMBER COMPANY EXPANDS—Anawalt Lumber Company, 11060 Pico Blvd., West Los Angeles, is adding about 3,000 sq. ft. to expand its mill work.

STUDEBAKER PLANS TRUCK PLANT — An assembly plant for Studebaker trucks in addition to the present West Coast assembly plant in Vernon is planned for the near future.

EASTERNER BUYS SAN FRANCISCO FIRM—Richard F. Bellack has acquired the Butte Electric & Manufacturing Corporation of San Francisco. He plans substantial expansion of the Butte company's operations in San Francisco.

MARTIN-BEADLE COMPANY FORMED—This new firm, a California corporation, will prepackage and ship fresh vegetables and fruits under its own brand, and its activities will include other food packaging. It will consumer-package for individual grower-shippers, food processors, retailers and wholesalers, on a contract basis. Charles L. Weckesser will head the development engineering, and research department; E. D. Beadle will be in charge of production, and Al Martin will be responsible for sales and promotion. The company has leased a building in Pasadena.

STEEL SERVICE FACILITIES—Joseph T. Ryerson & Son of Chicago have just completed construction of a new steel service plant at Emeryville. Wayne D. Dukette, former manager of the Cincinnati plant, becomes manager of the new Bay Area plant. Ray C. Page, former assistant sales manager at Chicago, will be in charge of sales. The plant

will provide service on a diversified line of steel products such as bars, structural shapes, plates, sheets; special steel consisting of hot and cold finished carbon and alloy bars, mechanical tubing, and stainless steel in all commercial forms and finishes; and many allied products including babbitt metal and non-metallic bearings.

HUNT FOODS TO EXPAND—A 274,000-sq. ft. warehouse at Hayward is the first step in a $2,750,000 expansion program of Hunt Foods, Inc. The warehouse will occupy 9½ acres at B and Winton Streets, adjoining the present 626,000-sq. ft. canning plant. The firm also plans a modern refrigeration depot to occupy 30,000 sq. ft.

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THE WEST ON ITS WAY

COLORADO

MANUFACTURER IN COLORADO SPRINGS—C. H. Kipfmueller and W. S. Harmon of Colorado Springs and P. V. Whitaker of Flint, Mich., have incorporated an organization in Colorado Springs to be known as Colorado Modern Crete, Inc.—to manufacture pre-cast lightweight concrete products.

DENVER MISSION CHANGES OWNERS — Thomas H. Dobson, Mission bottler, Denver, sold his interest in Lime Cola of Colorado to his two partners, C. A. Schuller and Lou Berg. The new concern is to be known as the Mission Orange Bottling Company.

FIRM MOVES TO COLORADO SPRINGS—Universal Electric Western Company have moved from Owosso, Michigan, to Colorado Springs where they have filed Colorado incorporation articles.

BOTTLING COMPANY SOLD—Standard Bottling Company of Denver has been sold to Canada Dry Corporation. It will suspend operations in early May.

IDAHO

MINE COMPANY ENLARGING—Highland Surprise Mining Co., operating in the Pine Creek area of the Coeur d'Alene mining district, have concluded arrangements with the Western Knapp Engineering firm of San Francisco for the enlargement of their flotation plant to 300 tons per day. The estimated cost of the new equipment is approximately $60,000.

TO WORK GYPSUM DEPOSIT — Plans are being considered by Northwest Gypsum Co. of Spokane for the building of a small mill at Rock Creek and a $500,000 plant at Weiser for the development of gypsum deposits. The operation would require the employment of 125 to 150 men to process 300,000 tons per year.

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MONTANA

TIMBER SALE—The Thompson Falls Lumber Co. was high bidder in a sale of state timber which will total more than $170,000. The timber is located in the Thompson River country.

NEW BILLINGS PLANT—Construction will start shortly on an oxygen filling station and acetylene-producing plant at Billings for the Linde Air Products Co., a unit of the Union Carbide & Carbon Corp. The new facilities, located about two and a half miles from Billings, will be on property leased from the Northwestern Improvement Co., a subsidiary of the Northern Patific railroad.

NEVADA

GABBS PLANT SOLD—According to the War Assets Administration, the Guiberson Whitewater Cement Co. of Los Angeles has made a down payment on the magnesium pilot plant at Gabbs.

SIERRA PACIFIC TO EXPAND—Sierra Pacific Power Co. plans a $3,500,000 "routine expansion" program. The first major expenditure will be for the construction of an extra power line into Reno from Donner summit.

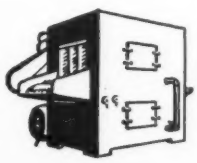
OREGON

PLANT ADDITION OPENS SOON—Thor's new general offices and plant at Aurora will open shortly.

STRAP FIRM MOVES—Signode Steel Strapping Company has moved into a new warehouse at 1500 S. W. Harbor Drive, Portland. The new plant provides space for tool repair and storage of larger stocks.

SHEET METAL WORKS ENLARGE—The W. A. Cripps Co., formerly Bill Cripps Sheet Metal Works, have opened their newly enlarged and modernized building at 2448 E. Burnside, Portland.

New Cleaner Improves the Spray-Washing of Metal



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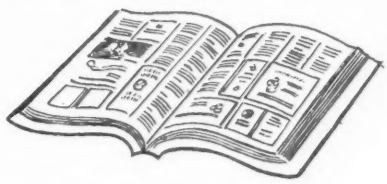

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THE WEST ON ITS WAY

OCHOCO TIMBER SOLD—The Ochoco Lumber Co., Prineville, submitted the high bid for 72,200,000 ft. of timber in the Ochoco National Forest. The bid was $1,034,175 for the timber consisting mostly of pine with some Douglas fir and white fir.

NAVIGATION COMPANY FORMED — Oregon-Alaska Navigation Co. has been formed in Portland for the operation of steamship service between Portland and Alaska.

SELLS SHINGLE COMPANY—O. V. Snider of Portland and H. L. Bryan and Harry Kime of Encino, Calif., have sold the Crowder Shingle Co., Portland, to W. W. Gotcher of that city. Mr. Gotcher owns the Atlas Shingle Co. and the Monarch Shingle Co. in North Portland.

ONTARIO MILL PURCHASED—The Firpine Products Milling Co., a recently formed corporation, has purchased the Blue Mountain Mills lumber finishing plant in Ontario. The mill will be remodeled and the dry kilns expanded at a cost of approximately $100,000.

UTAH

SUBSIDIARIES OF STANDARD—Plants for the Salt Lake Refining Co. and the Salt Lake Pipe Line Co., subsidiaries of Standard of California, will be constructed at an approximate cost of $5,000,000 each. Construction and operation are under the direction of C. E. Finney, Jr.

NEW COPPER REFINERY—A 12,000-ton-per-month copper refinery will be constructed by the Kennecott Copper Company near Garfield to produce refined copper ready for fabrication. The project, Kennecott's first refining venture, will refine the blister copper produced by the Garfield Smelter and will eliminate the necessity of shipping the metal to eastern refineries.

WASHINGTON

S. P. & S. RAILWAY TO BUILD—A one-story 90x200-ft. reinforced concrete maintenance building will be constructed in Vancouver by the S. P. & S. Railway Co. The estimated cost is $250,000.

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Anyone can make perfect bends with a Tal machine, on-the-job or in-the-shop. This fast working, easy-to-operate bender for wrought iron or steel pipe does in minutes work that otherwise takes many hours. No wonder thousands are in service everywhere. Write today for factual bulletin.
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PACKING PLANT TRANSFERS CONTROL — Operational control of the Washington Packers, Inc., Sumner, has been transferred to the Sumner Management Corp.

CEMENT FIRM TO EXPAND—Lehigh Portland Cement Co. plans a $1,000,000 expansion of its plant facilities at Metaline Falls. Present capacity of 2,000 barrels daily will be doubled by addition of another rotary kiln, additional crushing equipment, and additional equipment at the quarry.

SECOND ALUMINUM PLANT—Permanente Metals Corp. plan to build a second major aluminum fabrication plant in Spokane. The new unit will be located adjacent to the company's Trentwood rolling mill. This plant will be capable of processing more than 120,000,000 lbs. of metal a year and will employ several hundred men.

TUG-AND-BARGE FIRM SOLD — Washington Tug & Barge Co., Seattle, has been sold to the James Griffiths interests. Swan Nord has been installed as general manager. James and Churchill Griffiths also will be active in operation of the firm. An immediate expansion program is planned with the addition of new equipment.

TACOMA FIRM PLANS RECONSTRUCTION—The American Smelting & Refining Co. plan a reconstruction program to cost $1,000,000 at Tacoma. The first project is to be the construction of a $230,000 ore unloading and storage plant.

PLANT FOUNDATION TESTED—Test drillings have been started on the site of the carborundum plant on former port property at Vancouver. Drilling was for the purpose of analyzing subsurface soil conditions prior to building the foundation for the $2,000,000 plant. Approximately 1,500 workers will ultimately be employed there.

GREAT NORTHERN RELOCATION—A contract has been awarded for the major portion of a Great Northern Railway line relocation project in the Cascade mountains 46 miles west of Wenatchee. Estimated to take two years for completion, the project includes laying of 4,331 ft. of new line and construction of a 700-ft. tunnel and a 650-ft. bridge. Cost of work is estimated at about $1,000,000.

PLYWOOD PLANT TO EXPAND—The Weyerhaeuser Timber Co. will increase output of its plywood plant at Longview from 40,000,000 sq. ft. annually to 65,000,000 sq. ft. with the addition of new machinery and 100 more workers.

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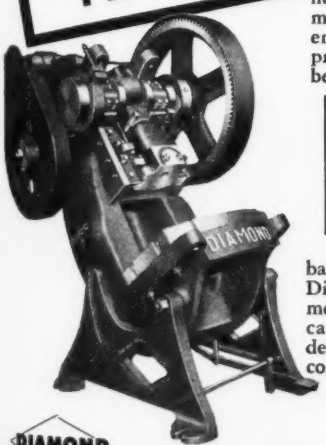


☆ As a result of strain gauge tests, frames of Diamond Punch Presses have been completely re-designed, with overall breaking strength now increased to *5 times rated capacity.* This tremendous safety factor has been obtained with no increase in cost; assures maximum overload capacity, enables you to do punch press jobs on a Diamond far beyond normal expectancy.

BRIEF SPECIFICATIONS				
Model	Standard Stroke	Shut Dia Height	Bed Area	Strokes Per Min.
Back-Geared 56-Ton	3" (Max. to order 8")	16"	20" x 30"	50

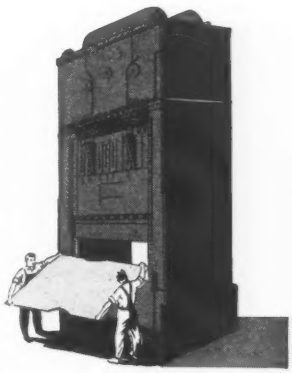
Made in both plain and back-geared types, there's a Diamond for every requirement from 9-ton to 56-ton capacities. Write for free descriptive circulars on the complete Diamond line.

New Diamond 56-Ton back-geared open-back inclinable punch press.

DIAMOND MACHINE TOOL CO.
DEPT. 1 • 3429 E. OLYMPIC, LOS ANGELES 23, CAL.

DIAMOND PUNCH PRESSES —FIRST IN STRAIN GAUGE ANALYSIS

Not a minute lost in 9 years
for lack of lubrication



FARVAL—*Studies in Centralized Lubrication No. 85*

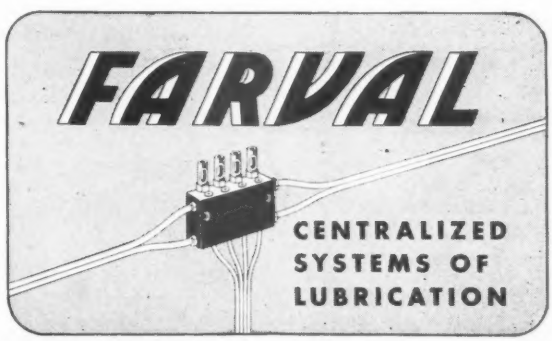
BACK in 1937 a large Detroit metal fabricating plant installed Farval centralized lubricating systems on its metal-forming presses—a total of 133 systems, serving 3100 bearings.

In the 9 years since then, no machine has been down to lubricate or to repair the lack of lubrication Farval saved the labor cost of 11 oilers per 24-hour day. Even more important during the war and postwar years has been the elimination of delays to production, such as were caused in the old days by stops for oiling, stops for repairs, stops for bearing replacements. Farval has paid for itself many times over.

Farval delivers oil or grease under pressure to a group of bearings from one central station, in exact quantities, as often as desired Farval—the Dualine System with the Positive Piston Displacement Valve—that has but 2 Moving Parts—is Fully Adjustable—and with a Tell-tale indicator at each bearing to show the job is done.

Savings comparable to the above can be made on your equipment with Farval Write for Bulletin 25. The Farval Corporation, 3269 East 80th Street, Cleveland 4, Ohio.

Western Offices:
SEATTLE, SAN FRANCISCO, LOS ANGELES



WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Don Meissner, formerly field engineer for the Fairbanks-Morse Co. in Puget Sound industrial area, has joined staff of American Machinery and Electric Co., Tacoma.

J. K. Sutherland has been elected vice-president in charge of sales for Benchmaster Manufacturing Co., Los Angeles.

Package Service Company, with headquarters at 2614 Alice Street, Los Angeles, Calif., is a new organization offering a complete packaging service. **Bob M. Lee** heads the company with **Robert H. Hadraba** as asistant in charge of all sales on specialty items.

Progressive Welder Company, Detroit, have expanded their facilities for fast service to West Coast industry with the establishment of a service and assembly branch at 1161 East Florence Avenue, Los Angeles 1, Calif.

E. P. McElhany has been appointed assistant to vice-president in charge of sales for Bethlehem Pacific Steel Corporation, San Francisco.

Howard Ledeen has been appointed to head sales of Ledeen Heavy Duty Cylinders for Engineering Products Co., Los Angeles.

National distribution of the Criterion line of boring tools manufactured by the **Criterion Machine Works,** Beverly Hills, Calif., will be handled by the Wendt-Sonis Co., Hannibal, Mo.

Hagan Corporation, Pittsburgh combustion and chemical engineering firm, have opened a branch office at 2018 Blake Street, Denver 2. W. C. Bennett is district manager.

Electric Products Co., Cleveland, Ohio, have opened a district office in San Francisco.

L. D. Fowler has been appointed manager of the Oakland, Calif., motor sales division of the General Electric Co.'s small and medium motor divisions.

Tri-State Supply Corp., 544 South San Pedro Street, Los Angeles, have been appointed West Coast distributor for Anaconda Magnet Wire. Tri-State also has warehouses at 554 Bryant Street, San Francisco 7, and 318 Occidental Avenue, Seattle 4.

Cliff A. Nelson has resigned from the Modesto Terminal Company, Modesto, Calif., to become associated with **Victor H. Owen, Jr.,** of the Owen Realty Company, San Jose.

Industrial Air Products Company has been appointed exclusive distributor in Oregon for the Wilson Welder and Metals Company, Inc., manufacturers of arc welding machines and electrodes. The main office is at 3200 N. W. Yeon Avenue, Portland.

Dave Hardie has been named manager of Los Angeles basin division of the Bethlehem Supply Company of California. **Lynn Guttery** will manage Coast division, and **Roger Brown** will manage San Joaquin Valley division.

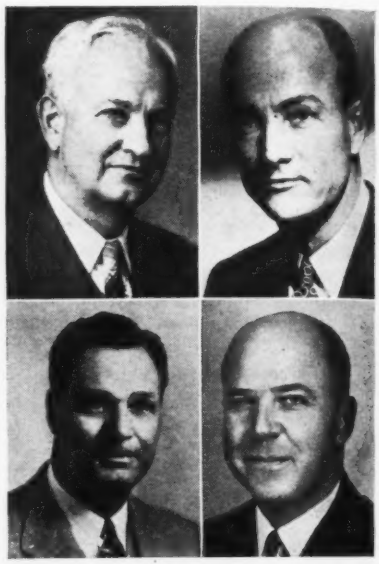
Parker Appliance Co., Cleveland, Ohio, has licensed two Los Angeles firms, **Pacific Screw Products Corp.** and **Deutsch Co.,** to manufacture and sell flared-tube couplings embodying Parker patents.

James R. Butler has been appointed Western regional manager of sales promotion for Rheem Manufacturing Company. He will be located in the San Francisco office.

L. M. Bussert has been appointed manager of operations in the marketing department of Standard Oil Company of California, succeeding **P. L. Fahrney,** recently elected v.-president.

H. O. Nichols, eastern division manager of Crown-Zellerbach Corp., will be transferred to San Francisco to head the merchandising department of the new multiwall bag plant at Port Townsend, Wash. **J. W. Kincaid,** salesman for Crown Willamette Paper Co., will serve as assistant sales manager.

White Stag Manufacturing Company, Portland, names **Thomas S. Harrison** director of sales. He is succeeded by **Ray Huston** as central California sales representative.



• Recently appointed vice-presidents of Air Reduction Pacific Company: (Top) H. W. Saunders, San Francisco district; L. A. Hamilton, Seattle district; (Bottom) H. A. Hoth, Southern California, and E. W. MacCorkle, Jr., Portland territory (see March issue for details).

Calvin D. Wood, advertising, has moved to new offices at 524 Market St., San Francisco 5.

Twin Disc Clutch Company, Racine, Wis., has opened sales, engineering, and warehouse facilities at 2950 Leonis Blvd., Los Angeles.

Charles S. Garvin has been appointed assistant advertising and sales promotion manager of Shell Oil Co., Inc., San Francisco. He was formerly resale department manager of the company's Sacramento Division.

Dr. Daniel E. Bonnell has been appointed vice-president in charge of sales of Chemical Corporation of Colorado, Denver.

Frank R. Cooper has been elected president of Howard-Cooper Corporation, with headquarters in Portland. He succeeds **L. W. Gardner,** retired. **William A. Wyle,** ex-general sales manager, becomes executive vice-president, with **Frank Parker** succeeding him as general sales manager.

George H. Jamison has assumed his duties as president of A. H. Cox & Company, pioneer machinery firm with headquarters in Seattle. He succeeds **A. H. Cox.**

A. P. Pahl succeeds **Walter D. Jones,** retired, as technical director of W. P. Fuller & Co., So. San Francisco laboratories. Mr. Pahl formerly mgr. of Fuller factory in Los Angeles, later became mgr. of So. San Francisco laboratories.

THOMAS HEAVY DUTY INDUSTRIAL TRAILER

The "General" is Thomas' heavy duty Industrial Trailer . . . one of the leaders in the Thomas line that includes hundreds of different 2- and 4-wheel trucks, trailers, casters and wheels for every purpose. Write for special trailer catalog or general catalog MC.

Stocks Carried by These Western Representatives

W. T. BILLARD, INC.
734 E. 3rd St.
Los Angeles 13, Calif.

GLEN L. CODMAN CO.
10521 Pearmain St.
Oakland 3, Calif.

HYSTER SALES CO.
P. O. Box 3956
Portland 8, Ore.

- Capacity: 4000-5000 lbs.
- Made in 4 sizes
- Fast, safe automatic coupling or manual coupling
- One piece welded steel frame
- Many special features

Manufactured by THOMAS TRUCK & CASTER COMPANY, 4806 MISSISSIPPI RIVER, KEOKUK, IOWA

R. G. Sindelar has become vice-president and sales manager of Marden & Hagist, ship and industrial suppliers, Portland.

Monsanto Chemical Company announces the opening of a sales office in the Equitable Building, Portland, with **Webb Hayes** and **Baxter Pearson** as sales representatives.

James O. Turner joins the F. M. Nicholas Company, manufacturers' representative, San Francisco, as a sales engineer.

Howard C. Hinig becomes assistant manager of industrial and transportation sales for the Sherwin-Williams Co. of California, with headquarters in Oakland.

Robert E. Mozena has been named general manager of Steel Framing & Building Corp., Los Angeles, distributor of commercial Quonset buildings and Stran-Steel framing. Other executives appointed include **R. C. Wainwright,** sales manager, and **J. P. Gunn,** chief engineer.

Carl vom Cleff has joined Northwest Marine Iron Works, Portland, as sales manager in the industrial and marine departments, succeeding **Harry Mendenhall,** who has moved to San Francisco.

Blake Supply Co., 2605 Western Avenue, Seattle, now has the exclusive distribution for the Harris Calorific Company in the western half of Washington. The supply firm also is agent for the Falk Corp. of Milwaukee, manufacturers of gear products.

Sundfelt Equipment Company, Inc., has moved from 3422 First Avenue, South, to 220 Hudson Street, Seattle 8.

Dick M. Truett becomes executive assistant to **W. A. Reanier,** sales manager, Tide Water Associated Oil Company, San Francisco. He will be transferred from the Los Angeles office.

Ben Graham has been named sales manager of Earl & Arlington, San Francisco.

Dwight Paulhamus, formerly sales manager of Tri-Valley Packing Association and more recently managing director of Certified Foods, San Francisco, has been named Western divisional sales manager of Stokely-Van Camp, Oakland.

Roger Huntress transfers from the Palmer, Mass., plant of Colorado Fuel & Iron to become manager of sales of wire rope for the California Wire Cloth Corp., a division of CF&I, located in Oakland. **R. E. Metzger,** formerly of the Denver office, has been transferred to Oakland to become assistant to **John T. Brittain,** general manager of sales.

L. Edward Scriven, formerly Western manager for McKinsey and Company, Management Engineers, San Francisco, has joined the staff of Roy S. Durstine, Inc., Advertising, New York City.

The Port of Stockton, which maintained an office in San Francisco from the opening of the Port in 1933 until 1942 when its commercial activities were interrupted by the war, has reopened the office. It is located at 25 California Street—Room 321. **Robert J. Strange** has been retained as the Port Stockton representative to contact San Francisco-Oakland area domestic and foreign shippers to keep them in continual touch with ship service, terminal and warehousing facilities at the Port of Stockton.

WHY POWER CURTAILMENT WAS SUSPENDED

Abnormally heavy late season rains, new P. G. and E. power, and more power from other sources combine to end shortage

Heavy rains and snows during the last month raised P. G. and E. reservoirs and increased the snow pack in the mountains enough to permit the suspension of curtailment, at least temporarily.

Here is what brought about the change:

1. *January weather in Springtime* . . . which replenished reservoirs, increased the snowpack and cut the need for unseasonable farm pumping.
2. *New P. G. and E. power plants* . . . like the 101,000-horsepower Kern Steam Plant near Bakersfield which is expected to be in operation this month, and others coming on the lines soon.
3. *Additional power from other sources.* We are tapping every feasible source of power. For example, increases in deliveries from Southern California have been important.
4. *Daylight time and voluntary savings* by our customers. These also helped, and it is important now that they continue.
5. *Water saved during curtailment.* We were able to hold precious water in our reservoirs because of the power cut.

Another appraisal of water and power supplies will be made June 1.

MEANWHILE . . . WE'RE WORKING NIGHT AND DAY ON NEW GENERATING PLANTS

Thanks for your help during the emergency. We know you will continue to guard against waste of electricity in every way you can.

P·G·and E·

WI 5X-548

PACIFIC GAS AND ELECTRIC COMPANY

NEW METHODS, MATERIALS, EQUIPMENT

That Will Help to Cut Your Production Costs

748

Handling Forks For Concrete Blocks

Designed to pick up, carry, and deposit unit loads of concrete blocks without the use of pallets or dunnage, the Lewis-Shepard concrete block handling forks for power fork trucks present a safe and economical method of transporting blocks.

Three slim, tapered forks of heat-treated high-carbon steel are spaced across the width of the fork truck elevating carriage so they can enter the center core of the bottom layer of blocks of a unit load. The forks are curved over the upper surfaces to fit the rounded wall of the core holes. Lewis-Shepard Products, Inc., Watertown 72, Mass.

749

Magnetic Fluid Clutch Is Patented

A new magnetic fluid clutch, controlled by small amounts of electric power and characterized by high efficiency, smooth operation, long life, and simplicity of construction has been invented by Jacob Rabinow of the National Bureau of Standards, Washington, D. C. The novelty of the clutch is based on the discovery that the frictional forces between solid surfaces and certain types of fluid media can be controlled by the application of magnetic fields.

The new clutch has possible applications in servo mechanisms, automatic control of machinery, in automobiles, and in other fields where ease of control and stability from low to very high speeds are important.

750

Roto-Table With Hand-cranked Tools

Designed and developed to provide central power for a variety of hand-cranked tools and machines, the Roto-Table is a product of Roto-Table Company, Dayton 3, Ohio.

Its advantage is that investment is limited to one power source, eliminating expense of powering each tool and machine individually.

751

An In-Between Cutter

A cutting tool designed for use between the wire cutting plier and the bolt cutter is the low cost Manco Junior, announced by The Manco Manufacturing Co. of Bradley, Illinois.

It can be used to cut steel bolts up to ¼ in., rods, screws, rivets, nails, fencing. Fifty pounds pressure at the handles affords two tons cutting power at the jaws.

752

Tubing Life Increased With Synthetic Hose

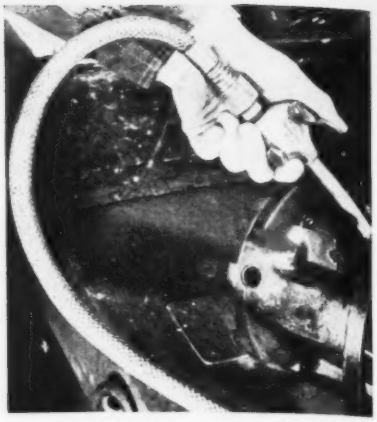
Dependability and life have been greatly extended in the flexible tubing field with the development of new Buna and Neoprene base synthetics. And leakage and maintenance troubles are eliminated.

The Ronaflex assembly illustrated is carrying air at 80 p.s.i. One-quarter-inch tubing will stand burst pressures to 1,000 p.s.i. and larger sizes proportionately less. Standard sizes from ¼ to 2 in. I.D. come in a complete range of lengths up to 200 ft. in the small diameter and 50 ft. in the largest diameters. Ronaflex Tubing Company, Inc., Philadelphia 2, Pa.

753

Tinner's Fire Pot Is Smokeless

A new low-pressure tinner's fire pot (No. 475) which is smokeless, sparkless, and sootless . . . and safer because it reduces the fire hazards of old-style charcoal



burners . . . is manufactured by The Turner Brass Works, Sycamore, Ill.

It features carburetor control for more perfect combustion and a flame control to regulate the exact amount of heat desired. Cummings, Brand & McPherson, Gas-Electric Building, Rockford, Ill.

754

Magnetic Coils Insulated With Plastics Sealing Sleeves

A new process to form a tough, tight-fitting insulation of magnetic coils is the use of plastics sealing sleeves. The sleeve slips inside the magnetic coal; the two ends are turned over the outside and left to air dry. Use of these sealing sleeves as an insulation enables many coils to be wound as one piece on long mandrels and cut to desired size.

The plastics sealing sleeves are also used as coverings for cable ends, grips for pliers, wrench and wire cutters, and as temporary protective covers for the storage and shipment of finished products. General Electric's Chemical Department, Pittsfield, Mass.

755

Horizontal Band Saw— The Model "B"

Of sturdy construction and designed to cut-off metals up to a capacity of 5 in. by 10 in., a metal cut-off band saw, Model

Yessir! I'm Interested in Anything New That Will Help Me Do a BETTER JOB.

WESTERN INDUSTRY
503 Market Street
San Francisco

Please send me information on the following items:.....

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Name.....*Title*.....

Company.....

Address.....

'B," has been introduced by the Johnson Manufacturing Corporation, New York 17, N. Y.

It has a rigid box type frame with the wheel assemblies mounted high on welded steel brackets bolted high on the frame. The bed is 7 in. wide by 28 in. long, and set on a three-point base to insure that the saw is always supported free of torsional strain, and the accuracy unaffected by floor conditions.

All controls are within easy reach of the operator, and fully guarded wheels insure safety. The machine operates and shuts off automatically.

There are three blade speeds: 45, 90, and 150 ft. per minute, giving suitable speed for every material. The machine is portable.

756

Sheet Metal Kit To Service Aircraft

Containing 202 tools, the aircraft sheet metal kit, which is introduced by Aircraft Tools, Inc., of Los Angeles, cuts servicing time on any all-metal plane.

Every tool and accessory needed for sheet metal work on planes are encased in

an all-steel portable box — a style designed for fishing tackle. The kit contains a removable upper tray and has a drop-front, making it easier to get at whichever tool is desired.

757

Big Machinery and Graco Trail-Lubers

Dispensing chassis lubrication, gear lubrication and air to man-sized machinery, the compact, self-contained Trail-Luber quickly services cats, cranes, scrapers and other machinery "on location."

Included on the unit are: a two-compartment hopper for pressure lube and gear lube; two air-operated pumps; two 20-ft. lubricant hoses with suitable adapters; one 25-ft. air hose with airline coupler, tire chuck and blower valve; a Briggs & Stratton "A" heavy duty engine, rated 1¾ hp.; and an air compressor with a 15-gallon storage tank, which delivers 7 CFM. Industrial Division of Gray Company, Inc., Minneapolis 13, Minn.

758

Low-Priced Line Of Carbide Reamers

A new line of reamers known as "Ream-Rite" has been designed for automatic and hand screw machines and work that does not require a long flute to operate through bushings.

These reamers, manufactured by Super Tool Company, Detroit, are priced almost down to high speed steel prices. They are available from stock in sizes ¼ in. to ⅝ in. and offer the same superior finish and long wear that is customarily obtained with carbide.

759

The Heart of the Vise

Three new vises are now in production as manufactured by the Hartmann Manufacturing Company, Racine, Wis. The "heart" of the line is the lock of these vises which has been fabricated as completely mechanical, but quick-acting and easy to operate.

Leaders.. IN MACHINES
IN MANPOWER
IN "KNOW HOW"

THE BETTER way to gain increased efficiency and lower unit production is to let Pacific Screw Products Corp. do that special job! Our complete parts production facilities include all types of automatic screw machines which will handle all metals in sizes from 1/32" to 6" diameters . . . also latest precision machines for all secondary and finishing operations.

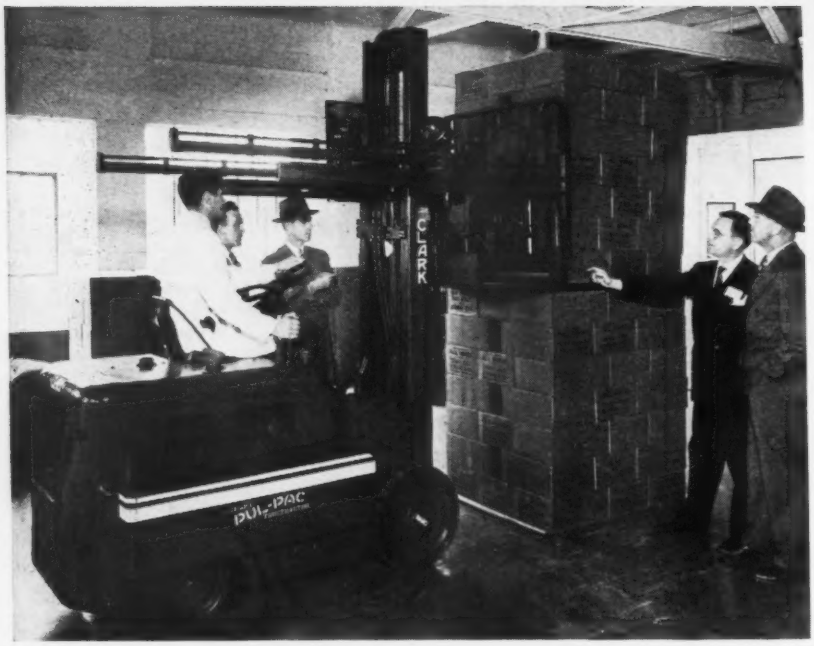
Your inquiry will be given prompt attention.

EFFICIENTLY SERVING SINCE 1929

PACIFIC
SCREW PRODUCTS CORP.

5211 Southern Ave. South Gate, Calif. Kimball 5211

LARGEST AND BEST EQUIPPED SCREW MACHINE PLANT IN THE WEST



• Clark's Pul-Pac is shown in Glen L. Codman Company display room at 10521 Pearmain Street, Oakland, California. Pictured from left to right are Donald T. Dorn, service manager, Glen L. Codman Co.; William G. Codman, salesman and vice-president, Glen L. Codman Co.; Frederick L. Greenlee, assistant manager, Western Division, Gerber Products Co.; Robert H. Griffin, sales manager and treasurer, Glen L. Codman Co., and W. U. Hudson, vice-president and general manager, Gerber Products Company, Oakland.

Push Pull Device Eliminates Pallets

An unique push pull handling device, which enables a fork truck to pick up, lift, carry and tier a unit load based on a sheet of corrugated paper, fiber board or similar material either disposable or durable in nature, is announced by the Clark Tructractor Division of the Clark Equipment Co., Battle Creek, Michigan.

This new Pul-Pac consists of a vertical movable rack which travels horizontally above the truck's broad carrying forks. A gripper device at the base of the rack seizes the projecting edge of the carrier sheet or load base and is then retracted, drawing the load onto the forks. At destination the operation is reversed, and as the rack holds the load over the desired position the load carrying-plate is removed from beneath the carrier sheet and the load is deposited. The whole operation is performed hydraulically, using power provided by the hydraulic system that activates the lifting and tilting mechanisms of the truck.

The Pul-Pac is said to be well suited to handle many items. Most pallet expense is eliminated — initial cost of pallets, time and labor consumer in handling empty pallets, cost of maintenance and cost of shipping. Furthermore, where space is at a premium, the absence of conventional pallets increases the cubic feet available for storage.

USE "SAFETY" CODE SYMBOL STAMPS

FOR
- PIECE WORK IDENTIFICATION
- INSPECTOR'S APPROVAL
- DATE CODING
- CONTAINER CONTENTS
- SPECIFICATIONS
- UNLIMITED CODE USES

"Safety" Code Symbol Stamps for every code identification purpose are furnished in stock or special designs—in "Safety" Heavy Bevel or Wedge-Grip styles as shown above. Write for literature or proposal on your needs.

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

114 East Carson Street • Pittsburgh 19, Pa.

Write for name and address of West Coast Distributor

FOR . . .
FISHER GOVERNORS AND CONTROLS
CALL . . .
SWETT - STONE CORP.

FISHER GOVERNOR COMPANY is the leading manufacturers of diaphram valves. Inner Valves have accurate contours for a definite correlation of maximum flow values and are precision ground to size—to maintain a given control pressure. For extremely small flows, the "Gismo" type Fisher Valves are recommended. For full details, call a Swett-Stone engineer.

Manning, Maxwell & Moore
Safety Valves and Gauges
Fisher Governors and Controls
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GAUGE AND INSTRUMENT REPAIRS

SWETT-STONE Corp.

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Phone YUkon 6-5731

Reading Guide for Western Management

A service for all management levels . . . current literature surveyed and appraised by the faculty of the School of Management, Golden Gate College

Personnel and Industrial Psychology

By Edwin E. Ghiselli and Clarence W. Brown, McGraw-Hill Book Co., New York, 1948. Price $4.50.

Professors Ghiselli and Brown have written a most comprehensive book on Personnel and Industrial Psychology. Their book, which grew out of their courses at the University of California, is designed, the authors hope, "to meet the needs of university students and of those in business, industry, and labor, who desire to obtain a foundation in the basic principles involved in the application of scientific psychology to the problems of the worker."

Whether a single text can be written to serve such diverse audiences is questionable. The authors realize this, for they caution the reader that "the extent to which this hope will be realized will, in part at least, be a function of the degree to which the reader will be willing to consider basic underlying principles before seeking solutions to his immediate problem."

Many earlier books in this field have emphasized the application of psychology to the problem of selecting and placing employees. Ghiselli and Brown give ample treatment to this important phase of the subject and, in addition, exhaustive coverage to equally vital phases of human and industrial relations. Job and work analysis, merit rating, interviewing, testing, work factors, design and equipment, training, accidents and safety, monotony, motivation and morale are all well explored from the point of view of applied psychology.

The book is especially valuable since it brings together the essence of the multitudinous articles and books which have been published in the field over a score of years. These studies are evaluated, contrasted and woven into a reasoned whole by the authors. Each chapter lists the pertinent references so that the reader who wishes to probe deeper can ferret out the original study.

The authors stress three points throughout their book: (1) personnel and industrial problems must be approached from the scientific point of view; (2) increases in productivity go hand in hand with improvements in the worker's adjustment; and (3) personnel and industrial relations problems involve both labor and management. In emphasizing the importance of the individual, they pay further tribute to the revolutionary work accomplished by Roethlisberger and his colleagues over the past decade.

Unfortunately, the text is written in dull, monochromatic and sleep-inducing style which college professors too often adopt to give professional and "scientific" tone to their publications. The result is a kind of rhetoric which Abraham Flexner once dubbed "pedagese." Not only is violence done to vocabulary but syntax is constantly tortured. Though trade jargon cannot be entirely eliminated from a text such as this, some vigorous re-writing and brutal editing would have shortened and enlivened the book, thus bringing its excellent content into sharper focus.

Students and instructors will find this a useful classroom text. Industrial psychologists will find it a handy reference. Others will find it rewarding, but desperately dull.

Reviewed by:
RUSSELL T. SHARPE
Personnel Administration.

Tool Steel Simplified

By Frank R. Palmer and George V. Luerssen; Carpenter Steel Company, Reading, Pennsylvania, 1948. $2.00.

This book is just what its title implies. It is a good treatment of the subject of tool steel and is written in a manner that should have wide appeal. The authors correctly point their remarks at the tool-making team: tool designers, tool makers, tool steel selecters, and heat treaters. They stress what is so often overlooked — that it is the *product,* rather than the sum, of the efforts of this team which results in effective tooling. In other words, if anyone of the team fails, the whole result fails.

There is a logical division of the subject matter into four basic sections: (1) Getting Acquainted with Tool Steel; (2) Selecting the Right Tool Steel for Each Kind of Tool; (3) Properties, Heat Treatment, and Testing of Tool Steel; and (4) Things Worth Knowing. In this last section, an important discussion of the relation of design to heat treatment adds realism that is commendable; however, the brief treatment of it is disappointing.

The book does an excellent job in presenting a difficult subject in a manner that is easily understood. A very liberal use of illustrations increases the effectiveness of the presentation.

Perhaps it is natural that the book should be "slanted" toward the products sold by the tool steel manufacturer who has published it. Certain sections are so slanted, but the result is not objectionable.

Reviewed by:
C. LLOYD THORPE
Manufacturing and Production Management.

Effective Letters in Business

By Robert L. Shurter, McGraw-Hill Book Company, Inc., New York, 1948. $2.75.

One of the fundamentals of business writing — the written page should *look* easy to read — is sometimes violated by book publishers. Another fundamental— we ought to use more plain talk in our writing—is always advised but sometimes not practiced in the text which introduces the example.

Chiefly, these two fundamentals prevent this book from being an outstanding treatment on the subject of business letter writing. The physical layout gives the impression of monotony, a fact which somehow throws a psychological block in the path of the reader. And the author shifts from good plain talk to stilted jargon and back again. As a handbook, it skimps on mechanics; as a textbook, it lacks sufficient examples and illustrations.

Aside from these handicaps, it's a pretty good book. The examples are fresh, there are some fine ideas for collection letters and sales letters; the book is concise and occupies a very small space on your bookshelf. Most of it you will enjoy just reading — something we can't say for every book on the subject.

Dr. Shurter is professor and head of the department of language and literature at the Case Institute of Technology.

Reviewed by:
ROY W. POE
Business Writing and Office Management.

* * *

Briefer Guides From The Management Library

Economic Report of the President

Superintendent of Documents, 1948 (pamphlet).

A summary of economic activity in 1947 and levels of activity and adjustments needed in 1948. Subject matter covers course of employment and production, the flow of goods and purchasing power, price and wage trends, inflation, and needed levels of employment, production and purchasing power.

Management for More Output

By Paul Mooney. An article in *Advanced Management,* March 1948.

A discussion of the morale factors affecting employee performance and how management can do its own job more effectively. This approach to greater productivity and the principles outlined to obtain it can be applied to any type of business.

American Battle for Abundance

By C. F. Kettering and A. Orth, General Motors, 1947 (pamphlet).

Here is a non-technical, factual presentation of the American way of producing things in large quantities — the story of mass production traced from its beginnings.

Reviewed by:
BERNA M. CARLSON
Management Librarian.

Balanced

IT'S the balance that counts in hand trucks! A perfectly balanced truck automatically takes the load off the trucker onto the truck. He speeds up his work. He ends his day fresh. He saves you costs.

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Associations Elect

Guilford W. Koch appointed to staff of Oakland Chamber of Commerce as mgr. of Alameda County New Industries Committee. He succeeds **Don M. Follett,** who will serve full time as general mgr. of the Oakland Chamber, including supervision of the organization's industrial activities.

Albert W. Gatov upped to pres. of Pacific American Steamship Ass'n from position of executive director, succeeding **E. Russell Lutz,** executive v.p. of the American President Lines. **A. R. Lintner,** pres. of American Mail Line, re-elected v.p. for the Seattle-Puget Sound area; **Hillman Lueddemann,** Pope and Talbot v.p., re-elected as v.p. for Columbia River area, and **Ralph J. Chandler,** v.p. of Matson Navigation Company, elected as v.p. in the Los Angeles-Long Beach area. San Francisco v. presidents are **D. N. Lillevand,** Grace Line v.p., and **Maitland S. Pennington,** v.p. of Pacific Transport Lines. **Henrietta T. Smith,** San Francisco, re-elected sec.-treas.

Waterfront Employers Ass'n of the Pacific Coast named the following as officers for 1948: pres., **F. P. Foisie;** v. presidents, **H. W. Clark** and **Gerald Dundon;** treas., **K. F. Saysette,** and sec., **J. A. Robertson.**

Bert Heggen, Skagit County, elected pres. of the Washington Public Utility Commissioners' Ass'n, succeeding **C. Jack Jones** of Kitsap County. . . . Mr. Heggen appointed three commissioners to a special committee to study and co-ordinate labor relations; they are **Irvin R. Woods** of Okanogan County, **Chancey Price** of Skamania and **Ralph Lawrence** of Clallam.

Howard Stingle, Washington Water Power Co., elected pres. of Spokane chapter of Washington Society of Professional Engineers; **R. E. Tobin,** managing engineer of the Portland Cement Ass'n, v.p.; **William Connolly,** consulting engineer, sec.; and **J. G. McGivern,** dean of engineering at Gonzaga University and retiring pres. of the chapter, state representative.

West Coast Lumbermen's Ass'n re-named **C. W. Ingham,** v.p. of Fischer Lumber Company of Marcola, Ore., as pres.; **Judd Greenman,** Oregon-American Lumber Co., Vernonia, Ore., as v.p. for Oregon; **Corydon Wagner,** St. Paul & Tacoma Lumber Co., Tacoma, as v.p. for Washington; **Frank A. Graham,** Hills Creek Lumber Co., Jasper, Ore., treas.; **W. B. Greeley,** Seattle, v.p.; **H. V. Simpson,** Portland, executive v.p., and **Harris E. Smith,** Portland, sec.

(Continued on page 99)

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2341

Hooks, Tongs, Grips—For safe, fast handling of heavy loads, Bulletin 200 of the *Downs Crane and Hoist Company, Los Angeles 37, California,* illustrates hooks, tongs, grips, and slings, showing construction features, capacity ratings, safety factors and specifications.

2342

Planned Lighting — Cost-cutting through improved lighting is the subject matter of a folder and booklet issued by *The Fostoria Pressed Steel Corporation, Fostoria, Ohio.* It includes the recommendation of a procedure, provides a guide for footcandle levels, illustrations for various lighting applications, and permits the industrialist to select models to suit his requirements.

2343

How to Select a Press—Bulletin G-47, as prepared by *Verson Allsteel Press Co., Chicago,* is a guide to help press users to determine what type of press is most suitable for specific job requirements and what methods of power application are most efficient. The material covers single, double, and triple-action mechanicals and hydraulics, open back inclinables, post-type hydraulics, knuckle-joint presses, forging presses, high-speed-high-production models and fully automatic transfer feed presses. Charts and formulae are shown for computing pressure requirements for blanking, drawing, blankholding, forging, coining and ironing.

2344

Adhesives—Research help for industrial customers, in choosing the right adhesives, sealers and coatings, is offered in a new brochure by *Minnesota Mining and Manufacturing Co., St. Paul.* The 28-page booklet, "3M Adhesives in Industry," contains 40 pictures and cites 18 case histories.

2345

Welding Technique—Simplified welding technique for maintenance and repair of a wide variety of metals, forms, castings, shapes, and heavy machinery components is described in a four-page bulletin issued by *Eutetic Welding Alloys Corporation, New York.* Specialized methods, which involve welds made below base metal heat of fusion through surface alloying, are described in considerable detail for major industrial alloys from which equipment is fabricated today.

2346

Aluminum Sheet and Plate—*Reynolds Metals Company, Louisville 1, Kentucky,* has released a 48-page booklet of technical information relative to various sheet and plate alloys, gauges and sizes. It is designed to meet the needs of the experienced user of aluminum as well as to give the newcomer a much clearer insight into the advantages which aluminum has to offer.

2347

Newly Discovered Rock - Perlite — The AleXitE Engineering Division of *Alexander Film Co., Colorado Springs, Colorado,* has a new educational folder dealing with the mining and processing of perlite which is trade-named "PerAleX." It is of volcanic origin, contains entrapped water which turns to steam in a furnace and pops the ore to a snow-white light weight aggregate containing insulating air cells. It is used to replace sand and gravel in plaster and many masonry products, such as bricks, blocks, insulated floors and roof decks.

2348

Rapid Reactors—Publication 4425, Cochrane Rapid Reactors, describes a new method of conditioning process cooling water and boiler feed in which the coagulated solids are separated from the water in a fraction of the time required by older methods. Mixing, floc formation, settling and thickening are accomplished in a single reaction vessel. *Cochrane Corporation, Philadelphia 32, Pa.*

2349

Bibliographies Available—Forty-four special bibliographies of technical reports and documents in various industrial fields are available free of charge from the *Office of Technical Services, Department of Commerce, Washington, D. C.* Among the fields covered by these special bibliographies are: Beryllium-aluminum alloys, cements and concrete, chlorine, confectionery, cutting tools, fats and oils, glass making and optical industry, plywood, soap and detergents, water supply and sewage disposal, etc.

2350

Clay Research—A new bulletin has been published by the State of Utah on the subject of "Halloysite of Agalmatolite Type, Bull Valley District, Washington County, Utah." The material is a rare type of clay with unusual properties, and it may have great economic significance. The booklet may be purchased for 10c.

2351

Infrared Applications—Radiant heat processing for metal-working, plastics, textile, leather, graphic arts, paper, food, woodworking, building, glass and bottling, rubber and other industries is described in a new booklet (A-3817) "Modern Baking, Drying, Heating With Industrial Infrared Lamps," announced by the *Westinghouse Electric Corporation, Lamp Division, Bloomfield, New Jersey.* Case histories are given to show how infrared cuts costs, speeds production and saves space wherever heat is required for dehydrating, finish baking or mass heating.

2352

Tube Fittings—A new catalog issued by the *Flodar Corporation, Cleveland, Ohio,* describes the importance of tube fittings in the sealing of higher fluid pressures. Engineering and design problems are discussed. Complete, detailed engineering specifications are clearly and accurately presented for both the Flodar Fluid Fortress no flare fitting and the Grip Tube flare type fitting.

2353

B. F. Goodrich Catalogs — B. F. Goodrich Company, Akron, Ohio, announces the following new catalog sections: Multi-cord Belting (2140), Elevator Belts (2500), Canning Conveyor Belts (2340), Conveyor Belt Grades (2220).

2354

Powdered Metal Process—Advantages of the powdered metal process of producing finished parts are outlined in a four-page illustrated bulletin put out by *Michigan Powdered Metal Products Co., Inc., Northville, Mich.* Also the research and production facilities offered for contract manufacture of powdered metal parts of all kinds are illustrated and described.

2355

The Significance of Lead—An excerpt from "History and Origins of Metallic Lead Products" is available and is presented separately from the book as up-to-date information which has a business, technical and research significance. Its title is "Current Developments and Improvements in the Employment of Lead-Lined Products, Chemical Apparatus, and in Lead Construction, Compared With Past Practices." The author, Alfred P. Knapp, is the head of Knapp Mills, Inc., New York City, and Andrews-Knapp Construction Co., Inc., considered to be leaders in the fabrication of lead-lined chemical apparatus and equipment.

2356

Flaking Mills — Allis-Chalmers, Milwaukee, Wis., describe their line of heavy duty flaking mills in a new 16-page bulletin, and explain why heavy duty mills reduce flaking costs, the importance of flaking mills in cereal production, and how flaking rolls are made. Flaking mills have a wide range of application in the chemical industry, and their uses are described in the increasing of the density of soda ash and similar products, in the changing of the structure of soluable chemicals to expose more surface for quick action in liquid mixtures, and in heavy duty grinding.

2357

Plant Safety—The way to have a good safety record is not to have accidents. A 20-page booklet, illustrated with cartoons, has recently been released to the entire personnel of the *Allegheny Ludlum Steel Corporation, Pittsburgh 22, Pa.* It contains a very readable outline of how to prevent accidents.

2358

Solvents in Metal Cleaning—Information on flash points, boiling ranges, chemical constitution, toxicity, trade names, on those solvents most frequently used in metal cleaning is contained in a compact publication issued by the *DuBois Company, Cincinnati 3, Ohio.* It aids in selecting the correct solvent for a particular job. This book is a reprint but also contains supplementary material.

2359

Report on Materials Handling—Believed to be the first of its kind and one of the few texts on materials handling problems, the new publication, "Some Basic Techniques in Materials Handling," is a comprehensive report of the proceedings at technical sessions of the Conference on Materials Handling at Cleveland last January. Nineteen papers are included. The book contains 84 pages, 8½x11, is paper covered and includes 15 pictures, 11 diagrams, and four charts and tables. It may be purchased for $1.00 from *Clapp & Poliak, New York 1, N. Y.*

2360

Trucks in Metal Stamping—"Industrial Logistics in Metal Stamping and Forging Plants" is the title of Elwell-Parker's latest bulletin in its series on the use of industrial trucks in industry. This booklet shows by case history and illustration how industrial trucks can effectively be utilized in metal stamping and forging plants.

2361

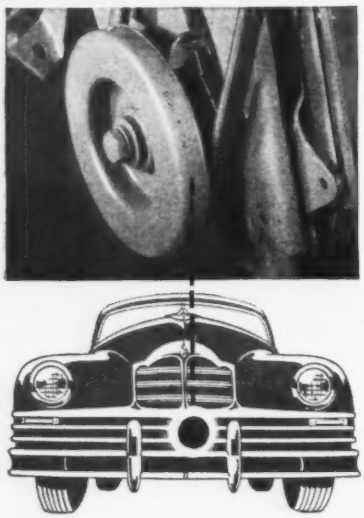
Asbestos Textiles—Printed in two colors, a new 1-page booklet (Form SP-7A) shows asbestos mining operations, carding and spinning machines and various asbestos textile products as manufactured by *Johns-Manville Corporation, New York 16, New York.* All descriptive material of its many uses is accompanied by an easy-to-read table which gives the Johns-Manville specifications for each product.

(Continued on page 98)

Silicone News

DC SILICONES

Materials to Match Ideas



Packard adopts Houde Torsional Vibration Damper with DC 200 Silicone Fluid to absorb vibration of crankshaft.

Some of the best ideas die for want of the materials necessary to make them practical or for want of the time required to develop them. This might have been the fate of the ideas embodied in the Torsional Vibration Damper shown above. Use of a viscous fluid to smooth out the twisting motion of crankshafts was sound in theory—but impractical because there were no fluids which kept essentially the same consistency in use at high and low temperatures.

Engineers of the Houde Engineering Division of the Houdaille-Hershey Corporation were stymied until they requested samples of DC 200 Fluid in December 1944 and proved to themselves that this Silicone Fluid developed by Dow Corning had exactly the properties they needed. Even so, a great deal of time was required before the device could be perfected and its superiority proved on Diesel engines and finally on the 1948 Packard 8 and DeLuxe 8.

And the story of DC Silicone Fluids as damping media has just begun. We have learned from this and many similar experiences that equally useful applications of the basically different Dow Corning Silicone products may require an equal amount of developmental time. It's none too early to investigate their potential advantages. DC Silicone Resins, Varnishes, Fluids, Lubricants and Silastic* are described in Catalog X 1-15, available from Midland or nearest branch office.

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FIRST IN SILICONES

(Continued from page 97)

2362

Directory of Mines—A complete directory of active mines and personnel is included in the 1948 Mine Development & Directory Number, *Mining World, San Francisco 5, Calif.* Several new editorial departments have also been added aimed at those interested in the mining field. The directory may be purchased for $2.00.

2363

Technical Books—Retail—The recent opening of a complete department of technical books has been announced by Stacey's of San Francisco. This is the West's first bookstore—retail and wholesale—to specialize in all the books of all the pure and applied sciences. Available is a "Technical Books of All Publishers" annual check list, which includes all scientific and business books issued from January through December, 1947.

2364

"Engineered Hydraulics"—This brochure is the new industrial hydraulic publication of *Adel Precision Products Corporation, Burbank, Calif.* It contains exacting and compact descriptive data which makes it valuable to anyone concerned with hydraulic design. It includes information on pumps, valves, cylinders, and power packs.

2365

Electric Products—*The Federal Electric Products Company, Newark 5, N. J.,* has issued a new edition of the Federalog, a catalog of Federal products. Information is included regarding the newest motor controls, safety switches, service equipment, circuit breakers, panelboards, switchboards, and bus duct. It is a 102-page brochure, well illustrated with photographs, drawings, charts, and specifications.

2366

Metal Mouldings—A 68-page catalog issued by *The Loxit Moulding Co., Chicago 7, Illinois,* contains descriptions of mouldings of every size and material, a complete line of tools and accessories, and it shows how to solve some of the unusual problems in connection with the application of mouldings. It is fully illustrated and indexed.

2367

Pre-Finished Nickeloid Metals—A new booklet, illustrated with hundreds of photographs of products which utilize pre-plated nickeloid metals for decorative trim or for functional use, has been issued by *American Nickeloid Company, Peru, Illinois.* Illustrated also are the various forms in which Nickeloid Metals are offered—in sheets, in coils, in round edge flat wire, plated one or both sides in bright or satin finish or in colorful tints, and in attractive patterns. The physical properties of the various metals are also listed.

2368

Training Courses—Two training pamphlets, "Trained Men" and "College Graduate, Where Now?", have been published by *Caterpillar Tractor Co., Peoria 8, Illinois,* to acquaint employees and prospective employees with the various training courses available at the plant.

2369

Condensate Return Systems—*Cochrane Corporation, Philadelphia 32, Pa.,* has published an expanded 20-page bulletin on high pressure condensate return systems. New technical material on turbulent vs. laminar steam flow and the effects of air and condensate films on heat exchange characteristics make the technical portions of this brochure useful to engineers responsible for the efficient transfer of steam heat in heating, cooking, drying, and pressing operations. Improved equipment for the positive removal and drainage of condensate is also described.

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2370

Modern Smoke Abatement — Bituminous Coal Institute's research department is distributing a new booklet, "Overfire Jets in Action," on modern smoke abatement practice for commercial and industrial stationary plants, railroads and steamboats. The statement is made that "modern overfire jets strike at the heart of the smoke problem and provide the turbulence and oxygen to burn the volatile matter from the coal before smoke can be formed; this basic principle should be kept in mind for all smoke abatement programs." *Bituminous Coal Research, Inc., Pittsburgh 22, Pa.*

2371

Machining Cast Aluminum Alloys — A 10-page reprint entitled "Machining Cast Aluminum Alloys" has just been issued by the Apex Smelting Company of Chicago and Cleveland. The reprint is timely because of the substantial cost-saving possibilities in machining aluminum castings. Beginning with a discussion of the over-all problem of machining cast aluminum alloys, the booklet further specifically discusses tool shapes and materials, cutting compounds, cutting speeds, lathe practice, milling, shaping and planing, drilling — to mention only some of the section headings. *Apex Smelting Company, Cleveland 5, Ohio.*

2372

Process Compressors—Ingersoll-Rand's new bulletin, Form 3132, illustrates a variety of sizes and types of air and gas compressors serving the chemical, process, and petroleum industries. There are 30 installation pictures with informative captions including the process or general application, horsepower size, pressure, the gas handled, and type of drive. *Ingersoll-Rand Company, New York 4, New York.*

Associations Elect

(Continued from page 96)

E. R. Scott, Edmonds, Wash., elected v.p. of Red Cedar Shingle bureau to succeed **Jess Schwarz** of Kelso, retired.

Harry Goodrich, Astoria, Oregon., elected v.p. of New England Fish Co.

New officers of Fir Door Institute are **R. E. Seeley,** v.p. of Simpson Logging Co., Seattle, elected pres.; **A. C. Peterson** of Tacoma, v.p.; **Herman Snider,** Hoquiam, Wash., treas.; **Norman O. Curver,** Tacoma, sec., and **Thomas B. Malarkey,** v.p. and sec. of M & M Wood Working Co., trustee.

Orland C. Mayer, Boise, mgr. of sales for Idaho Power Co., elected pres., Idaho Society of Engineers; **Allen S. Janssen,** dean of college of engineering at U. of Idaho, serves as v.p.

William P. Morley, Portland, pres. of Western Logging Co., re-elected pres. of Lumbermen's Industrial Relations committee. Other officers are **E. G. Griggs II,** Tacoma, v.p.; **Orville R. Miller,** Deep River Timber Co., treas.; **R. E. Baker,** Elk River Co., assistant treas., and **Walter A. Durham,** Portland, sec.-mgr.

National Timber Fabricators Institute was organized recently in Portland with the following officers: pres., **Ward Mayer,** pres. of Timber Structures, Inc., Portland; v.p., **H. F. Jefferson,** Jefferson & Nelson, Seattle; sec.-treas., **Axel Pedersen,** Summerbell Roof Structures, Los Angeles.

E. C. Rettig of Potlatch Forests, Inc., Lewiston, Idaho, re-elected pres. of North Idaho Forestry Ass'n; **George Beardmore** sec.-treas.

Western Metalworking Ass'n, Los Angeles, announces following new officers: **Thomas Pope,** pres.; **William G. Wilson,** v.p.; **L. L. Rice,** sec., and **Lee Miller, L. L. Rice,** and **George Milligan** as directors.

Lewie Williams elected pres. of West Coast Mineral Ass'n, Seattle. . . . **W. A. Richelson** succeeded **Lulu M. Fairbanks** as sec.

J. C. Kinnear, v.p. of Kennecott Copper Corp., White Pine County, Nevada, re-elected pres. of Nevada Mine Operators' Ass'n; **Henry R. Rives** re-elected sec.; **H. A. Johnson,** mgr. of Tonopah Mining Co., named first v.p., and **E. A. Julian,** v.p. of Goldfield Consolidated Mines Co., second v.p.

The Waterfront Employers Ass'n of Portland changed its name to Waterfront Employers of Oregon & Columbia River, appointing **N. A. Moore** of American-Hawaiian Steamship Company as pres. Mr. Moore succeeds **C. R. Jones** of W. J. Jones & Son. **E. S. McGrath,** Sudden & Christenson, Inc., elected v.p., and **R. E. Ferguson** re-elected sec.-treas. and mgr.

State Labor Row Ruling

The National Labor Relations Board ruled recently that an agent of a union that has not filed non-Communist affidavits cannot be placed on the ballot as an unattached individual in a collective bargaining election.

It was the board's first ruling on the question of whether an individual can "front" for unions which have not filed the affidavits and financial data required by the Taft-Hartley Law.

The decision was made in the case involving the Sacramento (Calif.) plant of the Campbell Soup Company and the AFL Teamsters Union, which had requested an NLRB election.

Mrs. Josephine Froehlich, former paid international representative of the Food, Tobacco, Agricultural and Allied Workers' Union (CIO), has sought to intervene in the election as an individual. The FTAA has not filed the required affidavits and financial data.

The board held that Mrs. Froehlich was acting as an agent for FTAA despite her resignation.

ILWU Suit Is NLRB Affair

Federal Judge George B. Harris recently dismissed a suit in which a union sued an employer for $500,000 damages for failure to bargain in good faith.

The judge said the case, involving Local 6 CIO International Longshoremen and Warehousemen's Union and the Sunset Line and Twine Company, falls under the direct jurisdiction of the National Labor Relations Board.

The union, the judge held, should bring its complaint before the board and not before his court.

The case was the first of its type under the Taft-Hartley law to be filed on the West Coast.

In his opinion, the judge noted the union has not filed anti-Communist affidavits prescribed by the Taft-Hartley act for unions who wish to take advantage of the NLRB's offices.

Foundry For Provo

Pacific States Cast Iron Pipe Co. will construct a $2,500,000 foundry addition to its plant at Provo. William McWane, president, and O. H. King, vice-president, said the 110,000 square foot addition would enable the firm to produce longer and greater sized pipe.

Mr. King announced an agreement had been entered into with the Geneva Steel Co. for pig iron supply.

The new addition will house a centrifugal casting foundry.

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Bulletin For Employers

Employers in any industry in California whose employees are covered by the Fair Labor Standards Act (Federal wage and hour law) and who pay their workers both in cash and by providing board and lodging, or other facilities are advised to consider their operations in the light of a new bulletin interpreting the application of the wage and hour law in such situations.

This advice was given by John R. Dille, regional director of the wage and hour and public contracts divisions, U. S. Department of Labor, in the eight Western states.

Revised and reissued because of the Portal-to-Portal Act, the bulletin constitutes the general interpretation of the administrator of the wage and hour law.

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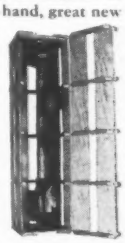

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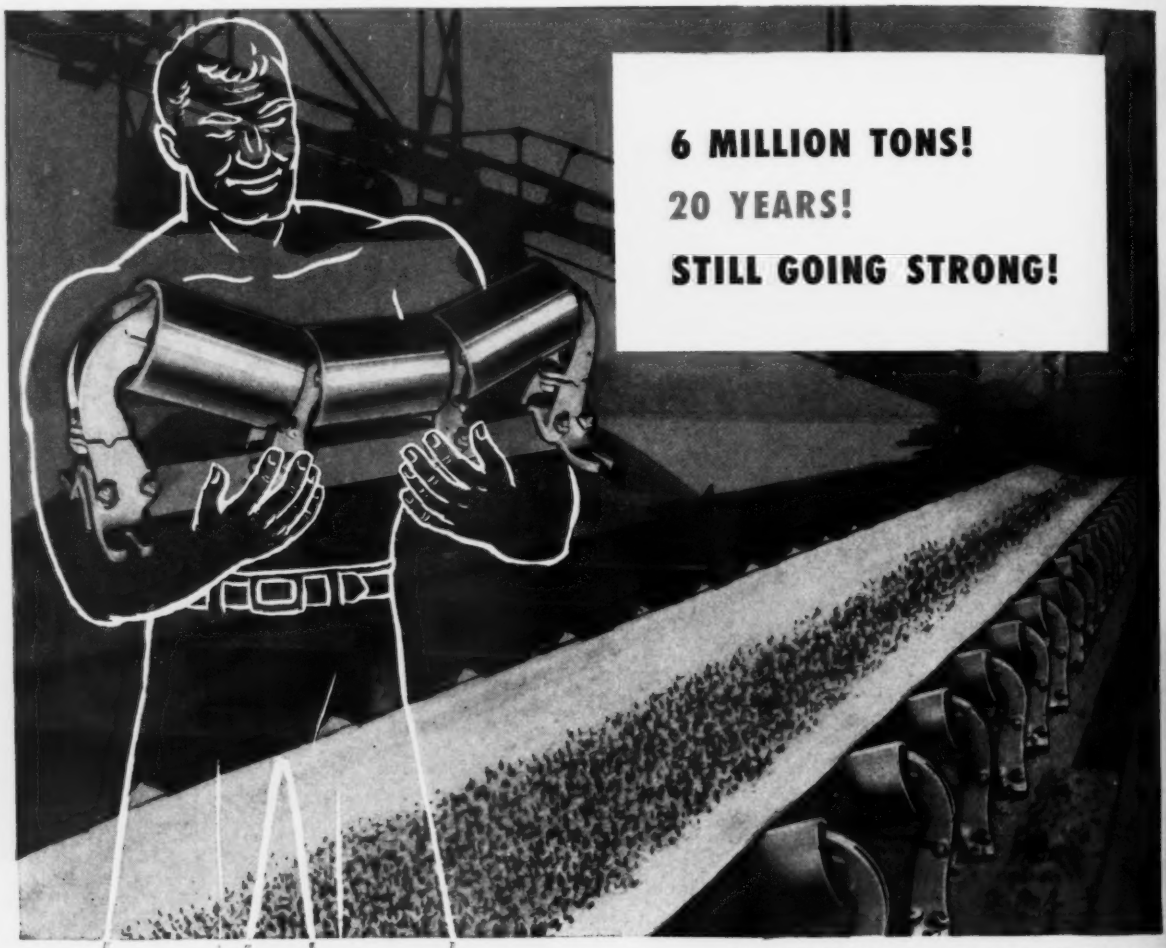

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